DELTA DESIGN
INC.

2850

INSTRUCTION MANUAL

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DELTA DESIGN, INC.
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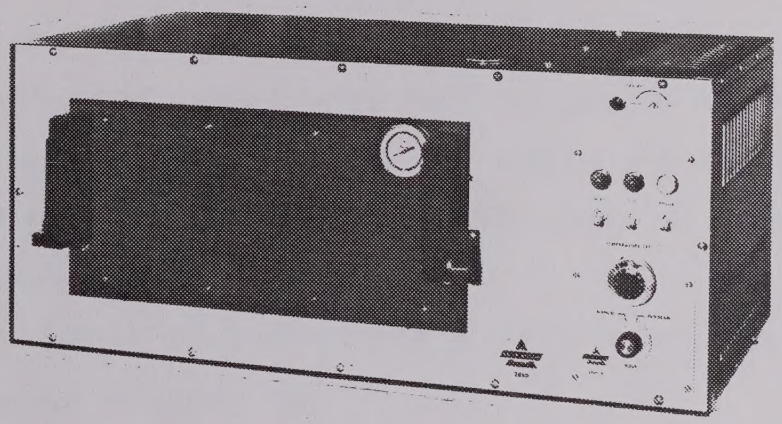
INSTRUCTION MANUAL
Model 2850



DELTA DESIGN
INC.

ENVIRONMENTAL TEST CHAMBER

ENVIRONMENTAL CONTROL EQUIPMENT FOR RESEARCH AND INDUSTRY
5775 KEARNY VILLA ROAD • SAN DIEGO, CALIFORNIA 92123

2850-0974

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San Diego, CA 92123

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SPECIFICATIONS

TEST AREA DIMENSION (H x W x D)	7" x 16" x 7" (17.78 x 40.64 x 17.78 Cm)
AIR CIRCULATION	140 CFM centrifugal blower with baffling provides equal distribution througout the chamber in a horizontal air flow pattern.
INNER LINER	Type 302 Stainless Steel
OUTER CASE	Aluminum
INSULATION	Fiberglas
WEIGHT	52 lbs (23.6 Kg)
POWER REQUIREMENT	120 VAC, 50 or 60 Hz, Single Phase, 20 Amp or 240 VAC, 50 or 60 Hz, Single Phase, 15 Amp.
CONTROLS	POWER On-Off Switch and Light COOL On-Off Switch and Light HEAT On-Off Switch and Light TEMPERATURE SET Control MANUAL/PROGRAM Control Switch (MODE)
HEATING ELEMENTS	Two 20 ohm Elements to give a total of 1875 Watts, Nichrome Wire.
COOLING	Liquid Carbon Dioxide (LCO_2) or Liquid Nitrogen (LN_2)
PROGRAMMING	Programmable
COOL DOWN TIME	Ambient to -53^{o}C in 3½ minutes.
HEAT UP TIME	Ambient to +217^{o}C in 9-3/4 minutes.

TEMPERATURE RANGE	-73°C to +315°C
RESETTABILITY	0.25°C
TEMPERATURE DEVIATION	0.1°C
LINE VOLTAGE STABILIZATION	0.25°C for 105 to 125 VAC, Line Voltage Change 0.25°C for 220 to 240 VAC, Line Voltage Change
AMBIENT TEMPERATURE COMPENSATION	±0.010°C/°C
HEAT LOAD COMPENSATION	±0.040°C Watt
THERMAL IMPEDANCE OF CHAMBER	Approximately 1°C/Watt
NULL DETECTOR CONTACT CLOSURE	Temperature will be within ±2°C of final temperature at 3 minutes after closure occurs.
NULL DETECTOR CONTACT RATING	1 amp, 240V, with contact protection provided by user to protect against inductive loads.

NOTE: IT IS RECOMMENDED THAT THIS MANUAL BE READ THOROUGHLY BEFORE CONNECTING EQUIPMENT TO ELECTRICAL POWER SOURCE.

INTRODUCTION

The Model 2850 Environmental Test Chamber offers an internal working volume 7" high, 16" wide and 7" deep. Air flow is horizontal at 140 CFM with baffling to provide equal air distribution.

Temperature control of $\pm 0.1^{\circ}C$ provides the precision necessary for bread-board circuit testing.

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1 CHAMBER & CONTROLLER DESCRIPTION

1.1 Chamber

1.1.1 The Model 2850 is a precision environmental temperature test chamber having a stainless steel interior, aluminum outer case and fiberglas insulation. The air circulation is closed and provided by a 140 CFM blower. The chamber is heated by applying full wave power to bobbin wound nichrome heating elements via the heat switch.

1.1.2 The chamber is cooled by injecting liquid CO_2 (liquid nitrogen in the LN_2 models) into the air stream through an expansion nozzle. The coolant flow is metered by a solenoid valve, controlled by a solid state switch.

The temperature control system is shown in block diagram form in Figure 5.

1.2. Solid State Controller

1.2 1 The controller compares the resistance of the temperature probe to the resistance of the TEMPERATURE SET potentiometer. (The resistance of a remote programming resistor is compared to the probe resistance if the MODE switch is in the program position).

1.2.2 The resistance of the probe will always be either less than, equal to or greater than the resistance of the TEMPERATURE SET potentiometer (program resistance). These three situations directly correspond to the chamber temperature being lower than, equal to, or higher than desired. The controller applies heat, coolant, or withholds both to obtain and maintain the selected temperature in the chamber.

1.2.3 Mode - The controller is a three mode unit, i.e.,

a) Heat only
b) No heat or coolant
c) Coolant only

This mode of control insures that LCO_2 or LN_2 is not wasted in a continuous cycling of the heaters and coolant valve such as would be the case for a simple two state output controller.

1.2.4 Further information on the controller may be found in the complete Type III Controller Manual included as part of this information package.

1.3 Null Detector Circuit

1.3.1 A contact closure is provided at the rear which functions when the chamber reaches the indicated set point of the controller. This contact closure may be used to signal external equipment that the chamber has reached selected temperature.

1.3.2 The Delta Design Model 9308 HI-LO Programmer, Model 9311 TEN STEP Programmer, and the Model 9313 HI-LO-AMBIENT Programmer utilize the null contacts to start their timers when they are used with the chamber. This contact closure feature is most useful in automatic test programming applications.

2 INITIAL SETUP

2.1 Electrical Connection - Power connection should be an AC power source rated at 125V - 20 amps - 50/60 Hz or 240V - 15 amps - 50/60 Hz (240V option). THE CHAMBER MUST BE CONNECTED TO EARTH GROUND (GREEN WIRE).

2.2 Liquid Coolant - Liquid Carbon Dioxide (LCO_2) - 1050 psi system (standard). Optional systems are LCO_2 - 300 psi, and Liquid Nitrogen (LN_2) - 100 psi.

2.2.1 Liquid Carbon Dioxide - 1050 psi system. A siphon type liquid CO_2 bottle is recommended.

2.2.1.1 Test the bottle by releasing a small amount of LCO_2 into a white handkerchief. Any brown stain indicates rust which would clog the filter and valve in the chamber. A wet handkerchief indicates water which would either freeze in the valve or clog the injector nozzle. Crack the LCO_2 valve open on the cylinder and notice the spray. It should be a dense, white cloud. It looks thin and gray when the tank is almost empty. An almost empty tank will not give proper cooling and should not be used. Connect the tank of LCO_2 to the rear of the chamber with the supplied high-pressure hose and fittings. Place a small amount of sealing compound on the threads of the male fitting to prevent leakage. DO NOT LET ANY SEALING COMPOUND GET INTO THE VALVE INLET ON THE REAR OF THE CHAMBER. Open the bottle and check for leaks which show as frosty spots on the hose or fittings.

2.2.2 Liquid Carbon Dioxide - 300 psi Low Pressure system.

2.2.2.1 When the in-plant use of liquid CO_2 exceeds approximately 1000 to 2000 pounds per month, a bulk liquid storage system can be installed to reduce the cost of coolant.

Chambers being operated with this type of system have to be fitted with a different CO_2 valve and injector than used on a 1050 psi system. Contact Delta for information concerning valve replacement. If new chambers are ordered for use with a bulk storage 300 psi system, the fact should be stated on the order.

> NOTE: The bulk storage system should be of the recirculating type if possible. If not, the supply should be located as close as possible to the chamber to minimize gas formation in the supply line. This is particularly important in low volume usage systems as the insulation and fluid flow are the factors that prevent boiling of CO_2 in the supply line. Gaseous CO_2 is not an effective coolant.

2.2.2.2 All lines, valves and connecting hoses should be blown out before the chamber is connected. Water is very troublesome and is apparently inherent in some low-pressure refrigerated supplies. If lines are opened to bleed off excessive pressure at shutdown, close them to prevent contamination by condensed moisture. This will help to keep ice from forming in the control valve.

2.3 Liquid Nitrogen

CAUTION

> Oxygen in the air surrounding the chamber inner liner and in the insulation can be liquified at low temperatures. This creates an oxygen rich atmosphere surrounding the heater area. The chamber tends to be self purging as the nitrogen replaces the usual atmosphere near the heaters. Any mixture of oil and liquid oxygen can be explosive so that extreme care must be used during operation at very low temperatures.

2.3.1 A 100 psi valve and stainless steel injector assembly is used for the liquid nitrogen applications. LCO_2 from a tank will not operate properly in a chamber equipped for LN_2.

2.3.2 Connect a liquid nitrogen liquid withdrawal container to the LN_2 input of the chamber with an insulated transfer line. A relief valve should be installed in the line with a relief pressure between 60 and 100 psi for a 2700 cubic foot 50 psi liquid withdrawal container.

3 STARTING UP PROCEDURE

3.1 Precautions

3.1.1 Connect SAFETY PLUG (rear of chamber) when external programmer is not being used. This will preclude any accidental high temperature being obtained if the MODE switch is placed in the PROGRAM position with no programmer connected.

3.1.2 Unplug the chamber from all sources of power before attempting any type of servicing or removal of the controller chassis. The case of the triac switch assembly, located on the controller sub-assembly, is at power line potential and extreme care in servicing or calibration must be exercised.

3.1.3 Insure that the correct type of LCO_2 (liquid carbon dioxide) source is connected to the chamber before operating at low temperature. Recommend standard 50 pound capacity high dry siphon LCO_2 supply. Test the LCO_2 for cleanliness by discharging a quantity of it through a clean white handkerchief. Bits of rust and traces of oil, ice or water indicate contaminated LCO_2 which should not be used.

3.1.4 Ground the case of the chamber to earth ground. When a grounded outlet is not available, use the three-to-two adapter (supplied with the chamber) and connect the green colored "pigtail" to earth ground. The chamber must not be operated without the case grounded.

3.1.5 Operate the chamber at a temperature of 200°C for an hour after prolonged operation at low temperatures. This restores the efficienty of the insulating material by driving out the moisture which has been condensed out of the air.

CAUTION

Liquid oxygen may be formed in the insulation when the chamber is operated at low temperatures. Any mixture of oil and liquid oxygen can be explosive. If oil contamination is suspected, bake the chamber out by operating it at a temperature of 200°C for a period of 3 hours before taking it to extremely low temperatures.

3.1.6 Do not leave liquid nitrogen trapped in a line (valves closed at both ends) as high pressures will be developed as the liquid absorbs heat and becomes gas.

3.2 Controls - See Figure 2.

3.3 Adjusting the Failsafe

3.3.1 To adjust the FAILSAFE high temperature protection unit, rotate the slotted FAILSAFE control. The trip temperature is increased by rotating the control counterclockwise and is lowered by turning the control clockwise. The FAILSAFE setting is preset at the factory at +315°C (maximum rating of standard chamber). If it is desirable to change the setting to a lower temperature setting, operate the chamber at the maximum temperature desired. Adjust the FAILSAFE until it is on the verge of tripping.

CAUTION

Do not rotate the FAILSAFE setting more than one full turn lower than the trip point, as this can damage the unit.

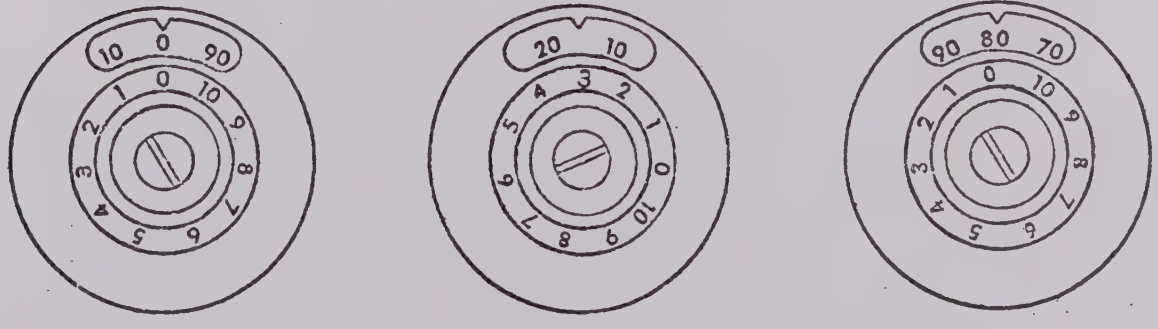
3.4 Setting the Dial Temperature Indicator

3.4.1 Refer to example A - Set both dials at zero.

3.4.2 One complete rotation of the knob equals 100°. Clockwise is plus (+) degrees (F. or C) and counter-clockwise is minus (-) degrees. Each rotation of the knob is indicated by the small dial nearest the knob.

3.4.3 The large dial indicates each degree, every tenth numbered. Thus, as in example B, the large dial is set at 15, and the small dial is beyond 3, therefore the setting is +315°.

3.4.4 When setting to a minus (-) temperature it is necessary to subtract the degrees from 100, i.e., 20 from 100 equals "80" reading on the large dial to have a setting of -20°. This is shown in example C. It will be noted that the zero on the small dial is just to the left of the marker. Also, on the models having a range greater than -100°, it is necessary to keep track of the counter-clockwise rotation of the knob.



A
(0°)

B
(+315°)

C
(-20°)

FIGURE 2
TEMPERATURE SET DIAL

4 PROGRAMMING

4.1 Connect the correct resistances between pins 1 and 3 of the PROGRAM jack. Set the MODE switch to PROGRAM and the HEAT AND COOL switches to their ON positions. The controller will apply heat or coolant as needed to obtain the programmed temperature.

4.2 A safety plug is provided with the chamber and should be kept connected to the PROGRAM input whenever an actual programmer or actual resistance is not connected. The safety plug will prevent the chamber from accidentally being programmed to a very high temperature if the MODE switch is placed in the PROGRAM position with an open PROGRAM input.

4.3 The safety plug disables the heat and cool circuits of the controller when the MODE switch is placed in the PROGRAM position.

5 WARRANTY

Delta Design, Inc. guarantees all products manufactured and sold by it to conform to published specifications and against defective material and workmanship for a period of 90 days from the date of our shipment. Temperature chambers and electronics are warranted for one year from date of shipment. All contactor assemblies are warranted for a period of 90 days or 1/2 million cycles. Obligation under these warranties is limited to repair or replacement by Delta at its plant or one of its authorized service stations, on any of our products which Delta determines to be defective or not in accord with stated specifications. Delta will not accept responsibility for any defect caused by improper use, nor will Delta assume liability for any unauthorized repairs or modifications to its products or materials, even though defective or not in accord with the specifications. In no case will responsibility extend to products, materials, or equipment not manufactured by Delta. All products to be returned to Delta's plant for warranty repair must have prior written approval from Delta Design, Inc., and all return transportation charges will be at the buyer's expense. Delta will not accept liability for any unauthorized returns. No liability will be accepted for any damages to customer's materials, and equipment due to the use or misuse of Delta's products, nor for any loss of profits or other special damages. Delta Design, Inc., reserves the right to change price, design features and/or specifications without notice.

TROUBLE SHOOTING: ELECTRICAL

HOW TO USE THIS CHART

1. Turn Mode Switch to Manual.
2. Note Thermometer Reading (Chamber Temperature)
3. Turn Heat and Cool Switches On.
4. Turn Temperature Set Control 50° Higher than Chamber Temperature and note the conditions of the Heat and Cool Lamps.
5. Turn Temperature Set Control 50° Lower than Chamber Temperature and note the conditions of the Heat and Cool Lamps.

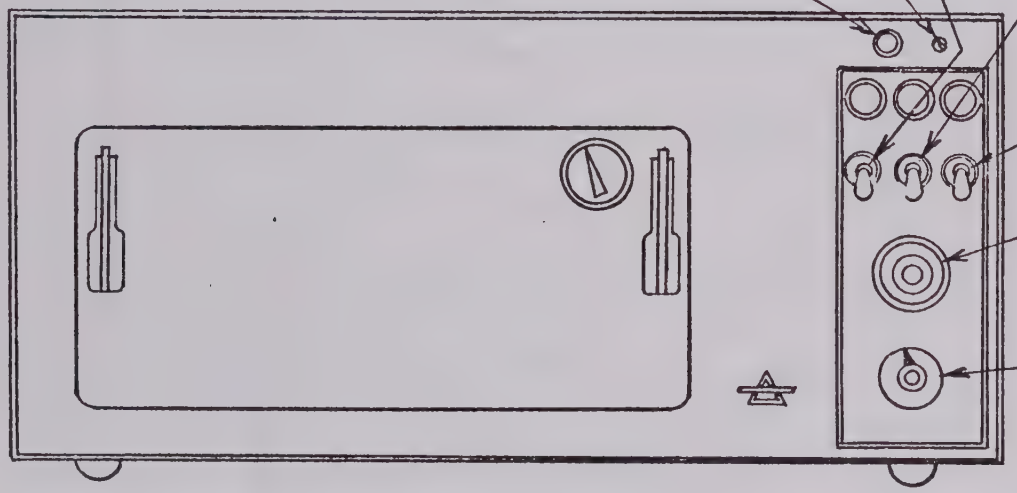
These two situations determine the correct block to read in the chart:

6. Enter the Chart at the Top for the conditions observed in step 4. (50° Higher than Chamber Temperature.)
7. Enter the Chart at the Left Side for the conditions observed in step 5. (50° Lower than Chamber Temperature.)

		LIGHT STATE WITH TEMPERATURE SET DIAL 50° HIGHER THAN CHAMBER TEMP.			
LIGHT STATE WITH TEMPERATURE SET DIAL 50° LOWER THAN CHAMBER TEMP.		RED - OFF GREEN - OFF	RED - ON GREEN - OFF	RED - OFF GREEN - ON	RED - ON GREEN - ON
	RED - OFF GREEN - OFF	Probe Element shorted to case. (Replace) Failure on Amplifier P.C. Board. (Trace signal with scope) Transformer Winding open.	Cool Circuit has failed. Trace signals with scope.		
	RED - ON GREEN - OFF		Probe shorted out. Temp. set Pot. — open. Cool Anticipator winding open. Check between Terminal A and Case of Q8 for 10Ω.		
	RED - OFF GREEN - ON	Failsafe Relay K1 not energizing. Coil resistance will be Approx. 10K. Failsafe open. Heat Triac failed.	NORMAL	Probe Open. Temp. Set. Pot. shorted. Heat Anticipator Winding open: Check between B and Case of Q9 for 10Ω.	Cool Circuit has failed — Trace signal with scope.
	RED - ON GREEN - ON		Heat circuit has failed — Trace signal with scope.Triac failed.		

FAILSAFE ADJUST- LOCATED ON FRONT OF CHAMBER
TURN TO CHANGE TEMPERATURE AT WHICH FAILSAFE WILL TRIP
CAUTION: DO NOT LOWER FAILSAFE TEMP. SETTING UNLESS HEAT SW. IS ON & FAILSAFE IS OFF.

FAILSAFE LAMP- GLOWS RED WHEN FAILSAFE IS TRIPPED



(5) HEAT SWITCH & LIGHT-- SWITCH ON--ON POSITION ALLOWS CONTROLLER TO APPLY HEAT AUTOMATICALLY TO MAINTAIN SELECTED TEMPERATURE IN CHAMBER RED LIGHT IS ON STEADY WHEN CHAMBER IS HEATING, BLINKS WHEN CHAMBER REACHES SELECTED TEMPERATURE ABOVE AMBIENT

(4) COOL SWITCH & LIGHT--SWITCH ON--ON POSITION ALLOWS CONTROLLER TO APPLY COOLANT AUTOMATICALLY TO MAINTAIN SELECTED TEMPERATURE IN CHAMBER GREEN LIGHT IS ON STEADY WHEN CHAMBER IS COOLING.

(3) POWER SWITCH & LIGHT--SWITCH ON MAIN POWER ON. WHITE LIGHT GLOWS WHEN POWER IS ON.

(2) TEMPERATURE SET DIAL--SET TO DESIRED TEMPERATURE. SELECTS CHAMBER TEMPERATURE IF MODE SWITCH IS IN MANUAL POSITION.

(1) MODE SWITCH--SET TO MANUAL POSITION. ASSIGNS THE SELECTION OF CHAMBER TEMPERATURE TO TEMPERATURE SET DIAL OR EXTERNAL PROGRAMMER.

MANUAL POSITION: TEMPERATURE SET DIAL DETERMINES CHAMBER TEMPERATURE.

PROGRAM POSITION: PROGRAMMING RESISTANCE CONNECTED TO PROGRAM JACK AT REAR OF UNIT SELECTS CHAMBER TEMPERATURE.

CAUTION: ALWAYS CONNECT SAFETY PLUG (AT REAR OF CHAMBER) WHEN AN EXTERNAL PROGRAMMER IS NOT BEING USED

THERMOMETER- INDICATES CHAMBER TEMP. IN TEST VOLUME.

OPERATING INSTRUCTIONS:

A. INSTALL THE CHAMBER, CONNECT POWER CORD TO SUITABLE OUTLET & COOLANT SUPPLY TO VALVE INLET.

B. FOLLOW STEPS 1 THRU 5.

OPERATING INSTRUCTIONS
FIGURE 2

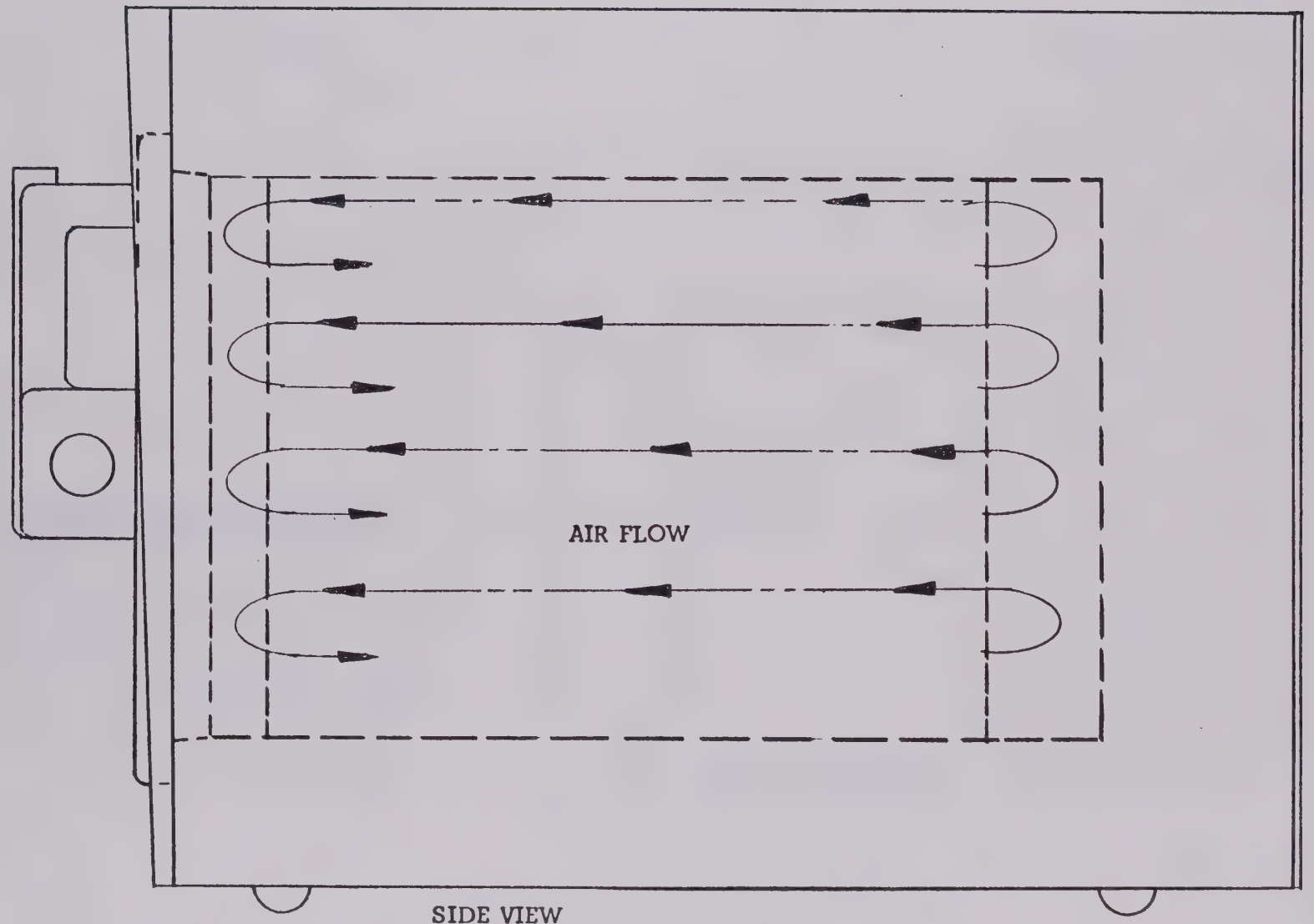


FIGURE 3

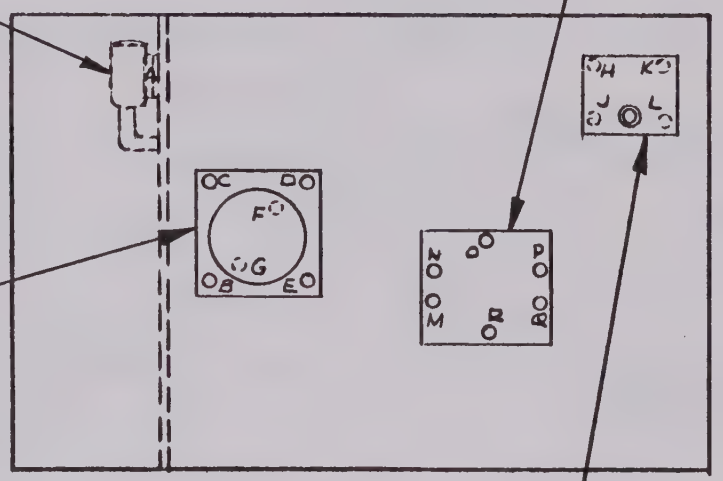
CHAMBER AIR FLOW PATTERN

TO REMOVE CO_2 VALVE

1. UNPLUG CHAMBER POWER CORD
2. REMOVE SIDE PANEL
3. REMOVE WIRES FROM TB2
4. REMOVE MOUNTING SCREWS (A) SEE CO_2 VALVE REMOVAL CHART
5. PULL CO_2 VALVE STRAIGHT OUT
6. AVOID BENDING OR DAMAGE TO INJECTOR STEM.

TO REMOVE HEATERS

1. UNPLUG CHAMBER POWER CORD
2. REMOVE SCREWS FROM REAR COVER
3. UNPACK FIBERGLASS
4. DISCONNECT HEATER WIRES
5. REMOVE (6) SCREWS, M, N, O, P, Q, R
6. PULL OUT HEATER ASSY.



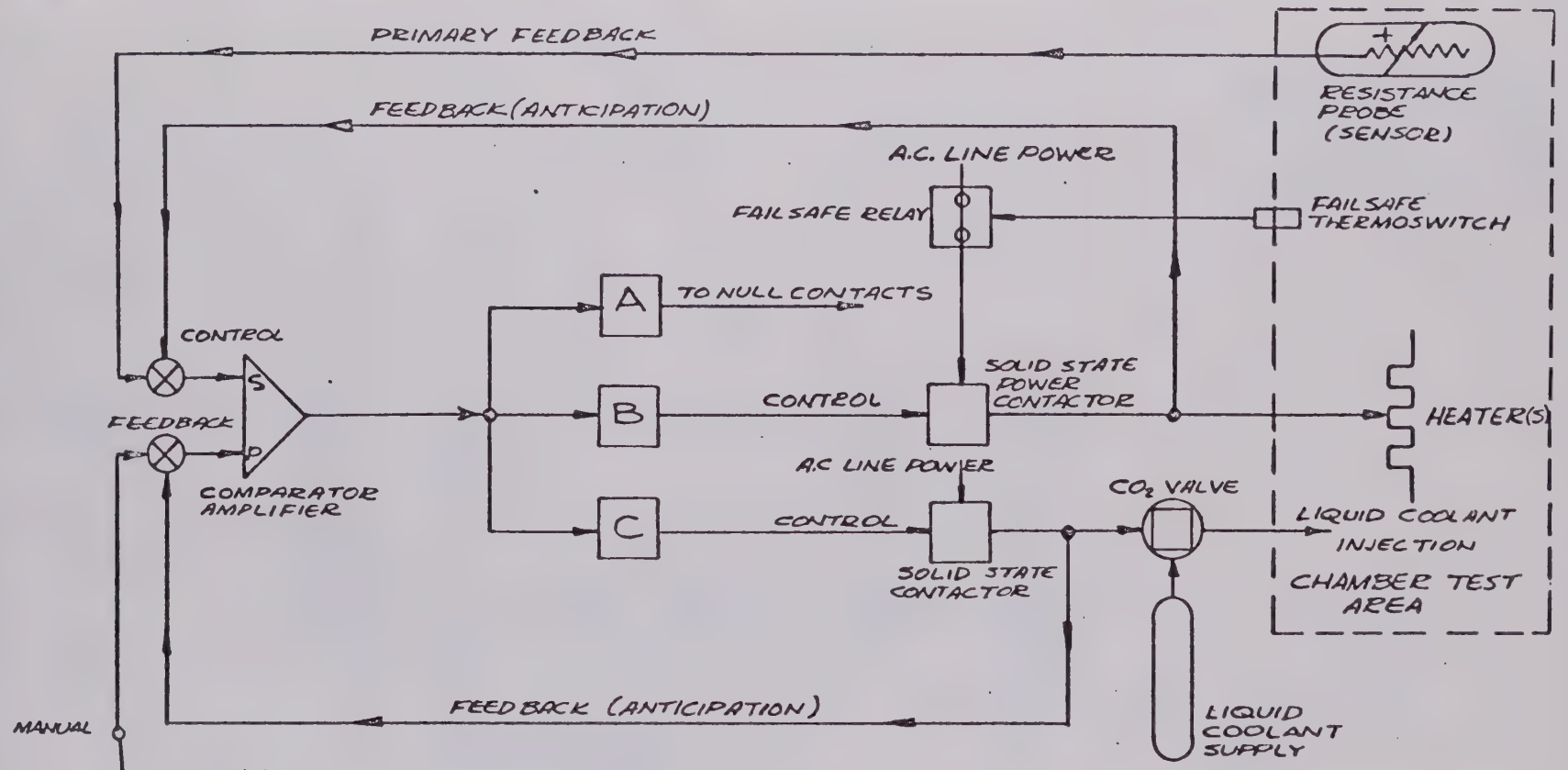
TO REMOVE BLOWERS

1. UNPLUG CHAMBER POWER CORD.
2. REMOVE 4 SCREWS B, C, D, E & REMOVE GRILL
3. REMOVE (2) WIRE NUTS
4. REMOVE (2) #10 SCREWS AT F & G.
5. PULL MOTOR STRAIGHT OUT

TO REMOVE LN_2 VALVE WHEN USED

1. UNPLUG CHAMBER POWER CORD
2. REMOVE (4) SCREWS AT H, J, K, L
3. PULL LN_2 PACKAGE DIRECTLY TO REAR TO CLEAR LN_2 INJECTOR TUBE.
4. REMOVE WIRE NUTS.

FIGURE 4
CO_2 - LN_2 VALVE REMOVAL

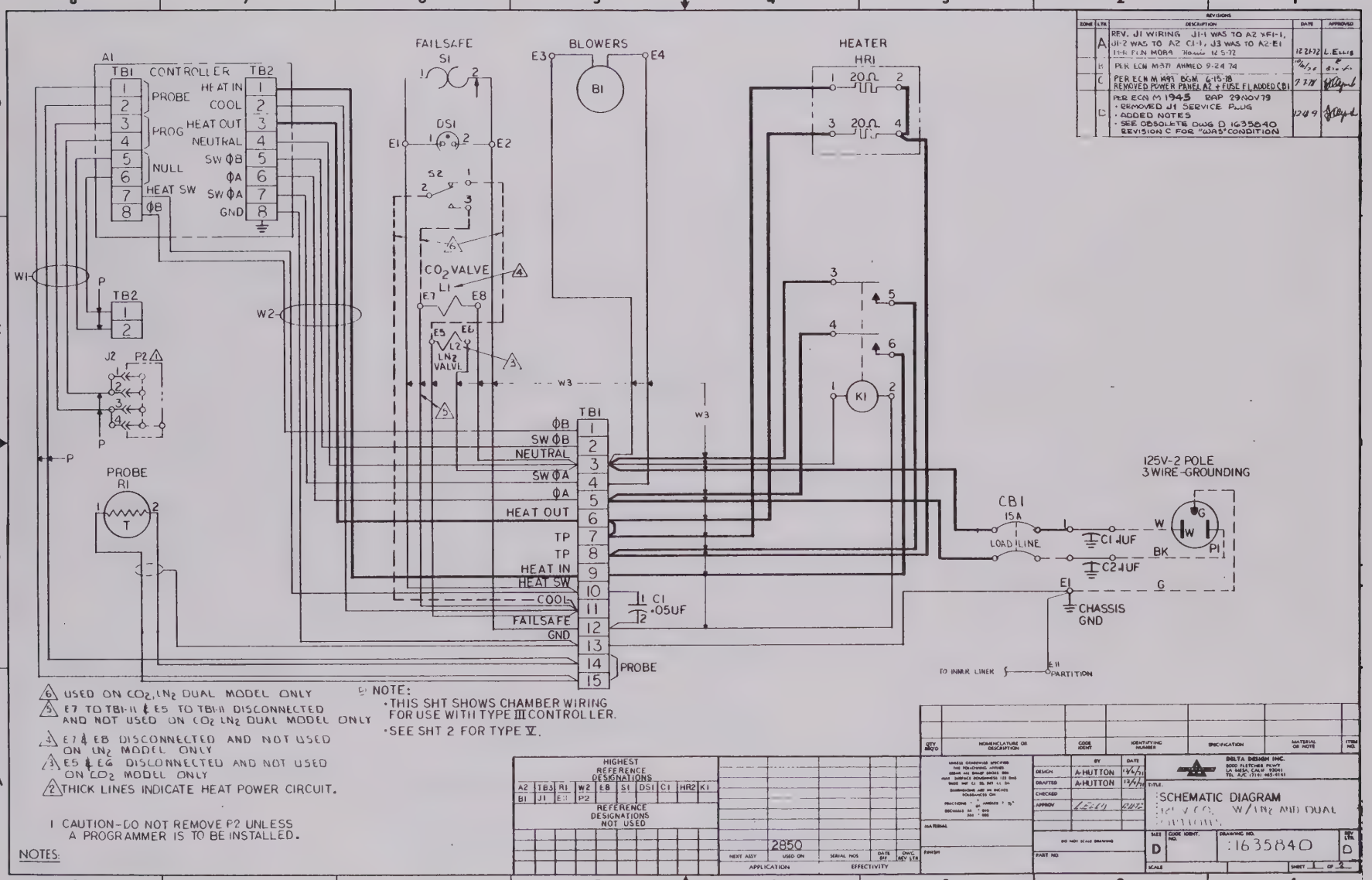


A = NULL DETECTOR SCHMITT
(REED RELAY OUTPUT)
PRODUCES CONTACT CLOSURE
FOR /P/ = /S/

B = HEAT. SCHMITT
(REED RELAY OUTPUT)
PRODUCES CONTACT CLOSURE
FOR /P/ INPUT AT AMPLIFIER
GREATER THAN /S/

C = COOL, SCHMITT
(REED RELAY OUTPUT)
PRODUCES CONTACT CLOSURE
FOR /S/ GREATER THAN /P/

TEMPERATURE CONTROL SYSTEM
SOLID STATE, TYPE III
DELTA DESIGN INC.



6 USED ON CO_2, LN_2 DUAL MODEL ONLY

5 E7 TO TB1-11 & E5 TO TB1-11 DISCONNECTED AND NOT USED ON CO_2 LN_2 DUAL MODEL ONLY

4 E7 & E8 DISCONNECTED AND NOT USED ON LN_2 MODEL ONLY

3 E5 & E6 DISCONNECTED AND NOT USED ON CO_2 MODEL ONLY

2 THICK LINES INDICATE HEAT POWER CIRCUIT.

1 CAUTION-DO NOT REMOVE P2 UNLESS A PROGRAMMER IS TO BE INSTALLED.

NOTES:

NOTE:
- THIS SHT SHOWS CHAMBER WIRING FOR USE WITH TYPE III CONTROLLER.
- SEE SHT 2 FOR TYPE V.

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	REV. J1 WIRING J1-1 WAS TO A2 XF1-1, J1-2 WAS TO A2 C1-1, J3 WAS TO A2-E1 IPR FCN M089 Nowak 12-5-72	12-7-72	L. Ellis
	B	PER ECN M371 AHMED 9-24-74	10/16/74	E. Ahmed
	C	PER ECN M493 BGM 6-15-78 REMOVED POWER PANEL A2 + FUSE F1, ADDED CB1	7-3-78	J. Lloyd
	D	PER ECN M 1943 RAP 29NOV79 • REMOVED J1 SERVICE PLUG • ADDED NOTES • SEE OBSOLETE DWG D 1635840 REVISION C FOR "WAS" CONDITION	12-4-79	J. Lloyd

HIGHEST REFERENCE DESIGNATIONS

A2	TB3	R1	W2	E8	S1	DS1	C1	HR2	K1
B1	J1	E11	P2						

REFERENCE DESIGNATIONS NOT USED

NEXT ASSY	USED ON	SERIAL NOS	DATE EFF	ENG REV LTR
2850				

APPLICATION — EFFECTIVITY

	BY	DATE
DESIGN	A-HUTTON	12/6/71
DRAFTED	A-HUTTON	12/7/71
CHECKED		
APPROV		

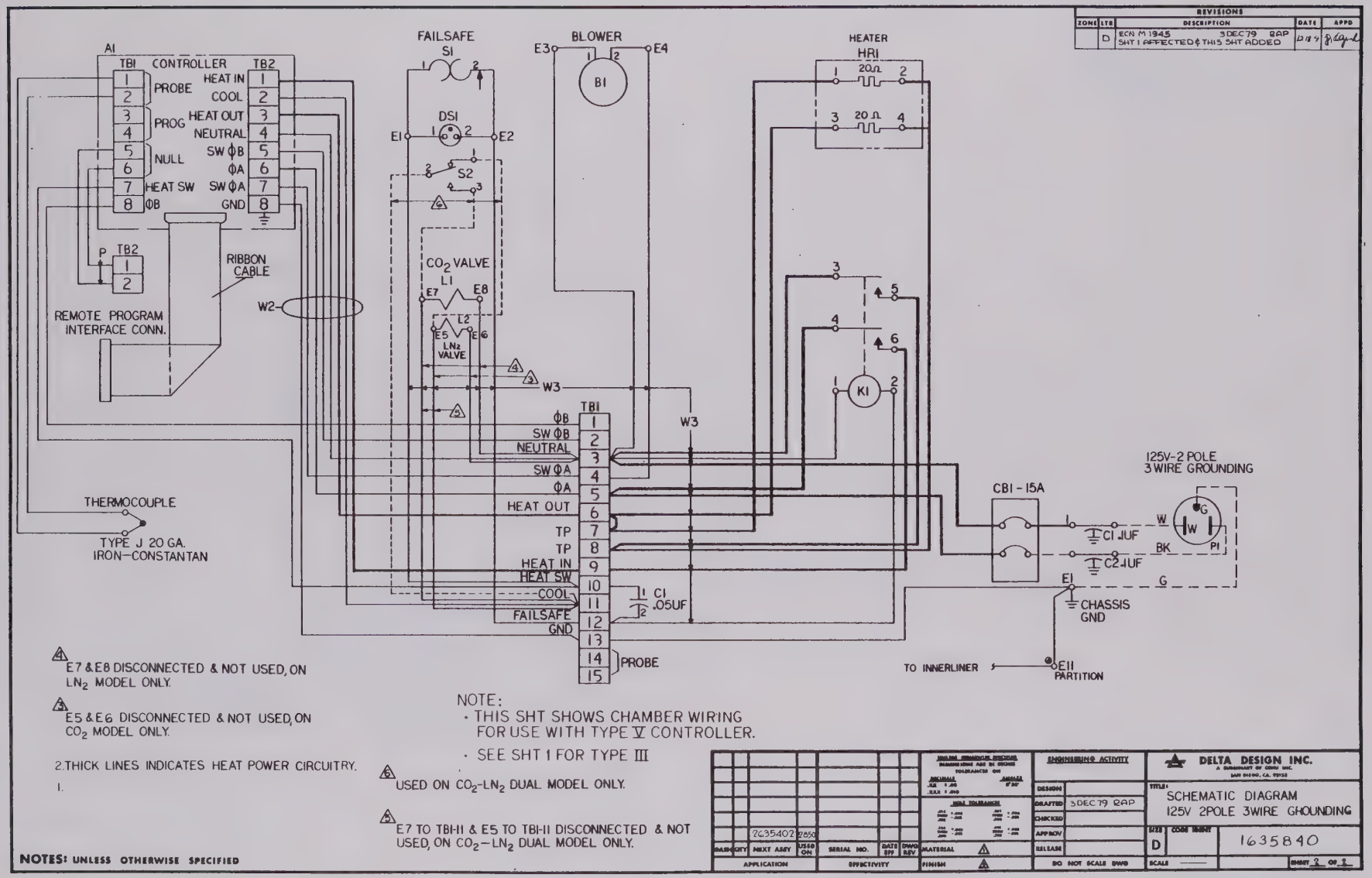
DELTA DESIGN INC.
8000 FLETCHER PKWY
LA MESA, CALIF 92041
TEL A/C (714) 465-9141

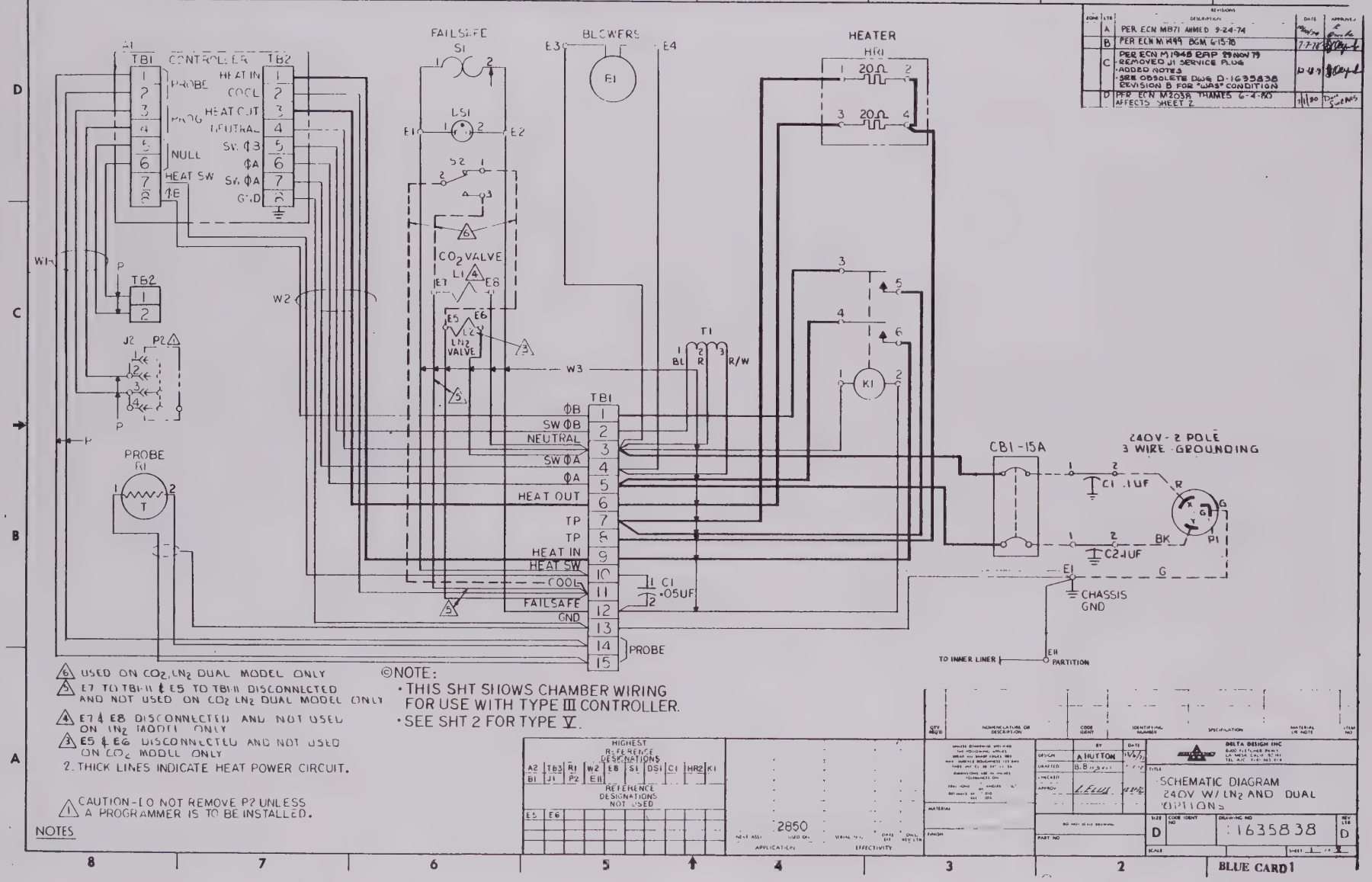
TITLE: SCHEMATIC DIAGRAM
W/ CO_2 W/ LN_2 AND DUAL

SIZE D | CODE IDENT. | DRAWING NO. 1635840 | REV LTR D

SCALE | SHEET 1 OF 2

BLUE CARD


REVISIONS
ZONE LTR DESCRIPTION DATE APPD
D ECN M1945 SHT 1 AFFECTED & THIS SHT ADDED 3DEC79 RAP
A1
TB1 CONTROLLER TB2
PROBE
PROG
NULL
HEAT SW
ΦB
HEAT IN
COOL
HEAT OUT
NEUTRAL
SW ΦB
ΦA
SW ΦA
GND
P TB2
RIBBON CABLE
REMOTE PROGRAM INTERFACE CONN.
W2
FAILSAFE
S1
DS1
S2
BLOWER
E3
E4
B1
HEATER
HR1
20Ω
K1
CO2 VALVE
L1
L2
LN2 VALVE
E7
E8
E5
E6
W3
TB1
ΦB
SW ΦB
NEUTRAL
SW ΦA
ΦA
HEAT OUT
TP
TP
HEAT IN
HEAT SW
COOL
FAILSAFE
GND
PROBE
C1 .05UF
THERMOCOUPLE
TYPE J 20 GA. IRON-CONSTANTAN
CB1 - 15A
C1 1UF
C2 1UF
125V-2 POLE 3 WIRE GROUNDING
W
BK
G
CHASSIS GND
TO INNERLINER
E11
PARTITION
4 E7 & E8 DISCONNECTED & NOT USED, ON LN2 MODEL ONLY.
5 E5 & E6 DISCONNECTED & NOT USED, ON CO2 MODEL ONLY.
2. THICK LINES INDICATES HEAT POWER CIRCUITRY.
1.
NOTE:
· THIS SHT SHOWS CHAMBER WIRING FOR USE WITH TYPE V CONTROLLER.
· SEE SHT 1 FOR TYPE III
6 USED ON CO2-LN2 DUAL MODEL ONLY.
6 E7 TO TB1-11 & E5 TO TB1-11 DISCONNECTED & NOT USED, ON CO2-LN2 DUAL MODEL ONLY.
NOTES: UNLESS OTHERWISE SPECIFIED
ENGINEERING ACTIVITY
DESIGN
DRAFTED 3DEC79 RAP
CHECKED
APPROV
RELEASE
DO NOT SCALE DWG
DELTA DESIGN INC.
SAN DIEGO, CA. 92123
TITLE: SCHEMATIC DIAGRAM 125V 2POLE 3WIRE GROUNDING
SIZE D
CODE IDENT
1635840
SCALE
SHEET 2 OF 2
2635402 2650
QUAN/QTY NEXT ASSY USED ON
APPLICATION
SERIAL NO. DATE EFF DWG REV
EFFECTIVITY
MATERIAL
FINISH



6 USED ON CO_2, LN_2 DUAL MODEL ONLY

5 E7 TO TBI-11 & E5 TO TBI-11 DISCONNECTED AND NOT USED ON CO_2 LN_2 DUAL MODEL ONLY

4 E7 & E8 DISCONNECTED AND NOT USED ON LN_2 MODEL ONLY

3 E5 & E6 DISCONNECTED AND NOT USED ON CO_2 MODEL ONLY

2. THICK LINES INDICATE HEAT POWER CIRCUIT.

1 CAUTION - DO NOT REMOVE P2 UNLESS A PROGRAMMER IS TO BE INSTALLED.

NOTES

©NOTE:
- THIS SHT SHOWS CHAMBER WIRING FOR USE WITH TYPE III CONTROLLER.
- SEE SHT 2 FOR TYPE V.

ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PER ECN M871 AMMED 9-24-74		
	B	PER ECN M1499 BGM 6-15-76	7-7-76	
	C	PER ECN M1948 RAP 29 NOV 79 · REMOVED J1 SERVICE PLUG · ADDED NOTE 3 · SEE OBSOLETE DWG D-1635838 REVISION B FOR "WAS" CONDITION	12-4-79	
	D	PER ECN M2058 THAMES 6-4-80 AFFECTS SHEET 2	7/1/80	

HIGHEST REFERENCE DESIGNATIONS
A2 | TB3 | R1 | W2 | E8 | S1 | DS1 | C1 | HR2 | K1
B1 | J1 | P2 | E11
REFERENCE DESIGNATIONS NOT USED
E5 | E6

2850
APPLICATION

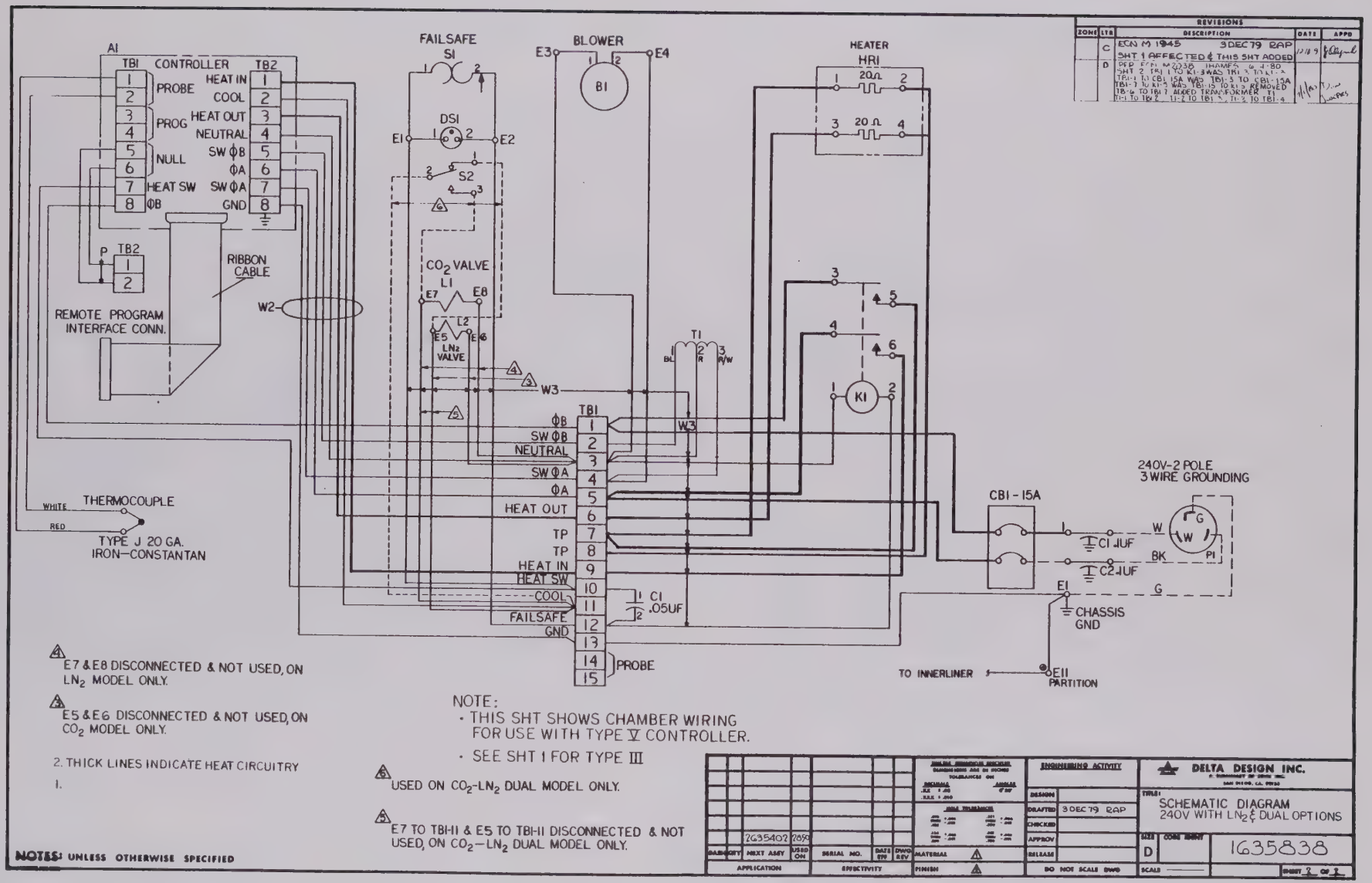
DELTA DESIGN INC
6660 FLETCHER AVE.
LA MESA, CALIF. 92041
TEL. AC 714 465-9191

TITLE: SCHEMATIC DIAGRAM 240V W/ LN_2 AND DUAL OPTIONS

	BY	DATE
DESIGN	A HUTTON	11/4/71
DRAFTED	B.B.	
CHECKED		
APPROV	L. ELLIS	

SIZE D | CODE IDENT NO | DRAWING NO 1635838 | REV LTR D
SCALE | SHEET 1

BLUE CARD 1



4 E7 & E8 DISCONNECTED & NOT USED, ON LN_2 MODEL ONLY.

3 E5 & E6 DISCONNECTED & NOT USED, ON CO_2 MODEL ONLY.

2. THICK LINES INDICATE HEAT CIRCUITRY

1.

NOTE:
- THIS SHT SHOWS CHAMBER WIRING FOR USE WITH TYPE V CONTROLLER.
- SEE SHT 1 FOR TYPE III

6 USED ON CO_2-LN_2 DUAL MODEL ONLY.

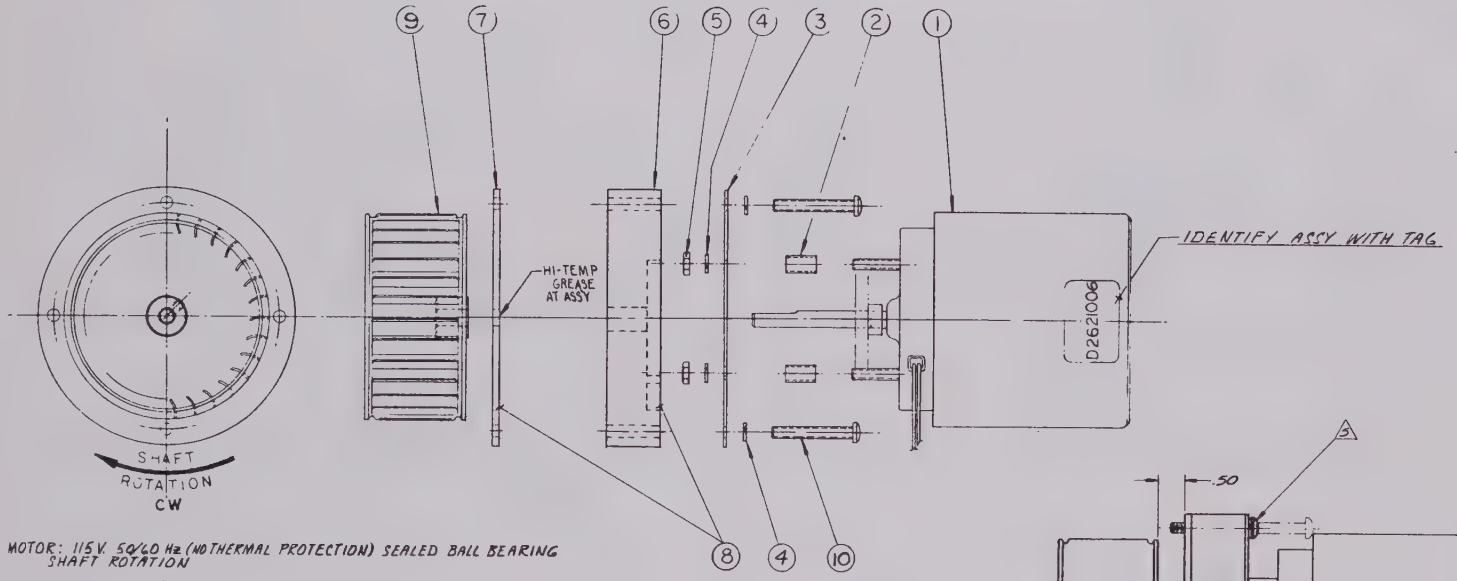
5 E7 TO TBH-1 & E5 TO TBH-1 DISCONNECTED & NOT USED, ON CO_2-LN_2 DUAL MODEL ONLY.

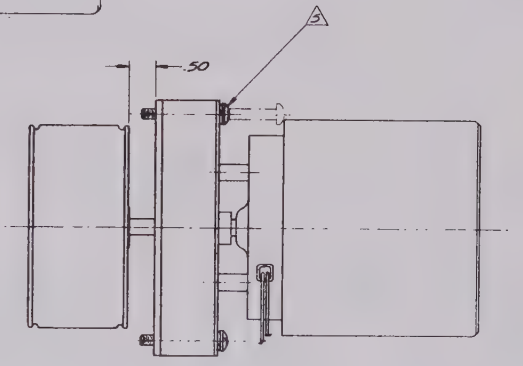
NOTES: UNLESS OTHERWISE SPECIFIED

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD
	C	ECN M 1945 3DEC79 RAP SHT 1 AFFECTED & THIS SHT ADDED	12/19	
	D	PER ECN M 2238 (MAPES & J-80) SHT 2 TB1-1 TO K1-3 WAS TB1-3 TO K1-3 TB1-1 TO CB1-15A WAS TB1-3 TO CB1-15A TB1-7 TO K1-5 WAS TB1-5 TO K1-5 REMOVED TB1-6 TO TB1-7 ADDED TRANSFORMER T1 T1-1 TO TB1-2 T1-2 TO TB1-5 T1-3 TO TB1-4	1/16/80	

2G35402	2858					ENGINEERING ACTIVITY	DELTA DESIGN INC.
DASH NO. IT	NEXT ASSY	USED ON	SERIAL NO.	DATE EFF	DWG REV	DESIGN	TITLE: SCHEMATIC DIAGRAM 240V WITH LN_2 & DUAL OPTIONS
APPLICATION			EFFECTIVITY			DRAFTED 3DEC79 RAP	
						CHECKED	
						APPROV	
						RELEASE	SIZE D — CODE IDENT — 1635838
						DO NOT SCALE DWG	SCALE — SHEET 2 OF 2

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	PER ECN M1401 5-7-78 BGM REVISED NOTE 3	5-7-78	





1.) MOTOR: 115 V. 50/60 Hz (NO THERMAL PROTECTION) SEALED BALL BEARING SHAFT ROTATION

2.) IMPELLER: REVCOR #0381-187S (CCW ROTATION) ALTER PER B1G32186

3.) RTV ITEM 7 TO ITEM 6; ATTACH ITEM 3 (MOTOR PLATE) TO ITEM 1 (MOTOR) USING HARDWARE, THEN RTV TO ITEM 6

4.) BLOWER MOTOR ASSY RATED AT 140 C.F.M. AIR MOVEMENT, NOM.

⚠3 TAPE ITEMS 4 & 10 IN PLACE TO PREVENT BEING JARRED LOOSE BEFORE INSTALLING ON CHAMBER.

NOTES:

QTY REQ'D	NOMENCLATURE OR DESCRIPTION	CODE IDENT	IDENTIFYING NUMBER	SPECIFICATION	MATERIAL OR NOTE	ITEM NO

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS .XX ± .010 .XXX ± .005 ANGLES ± 1/2°
MATERIAL
FINISH

	BY	DATE
DESIGN	L. ELLIS	4/14/70
DRAFTED	L. ELLIS	4/14/70
CHECKED	Hamm	7/21/70
APPROV		

DELTA DESIGN INC.
8000 FLETCHER PKWY.
LA MESA, CALIF. 92041
TEL. A/C (714) 465-9141

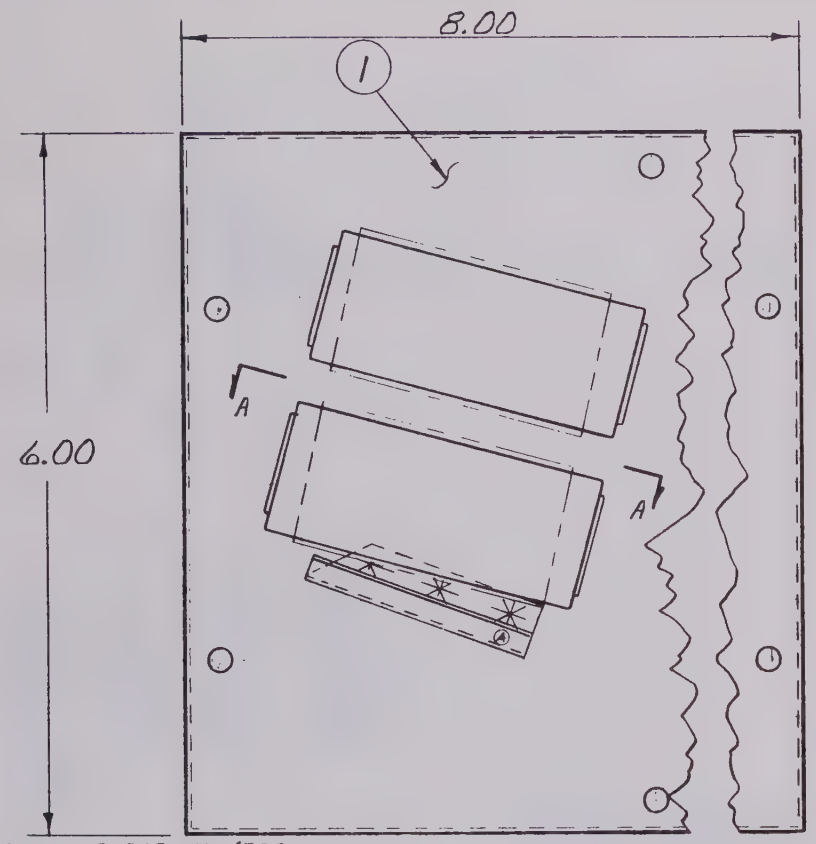
TITLE: 50/60 Hz BLOWER MTR. ASSEMBLY CW SHAFT ROTATION

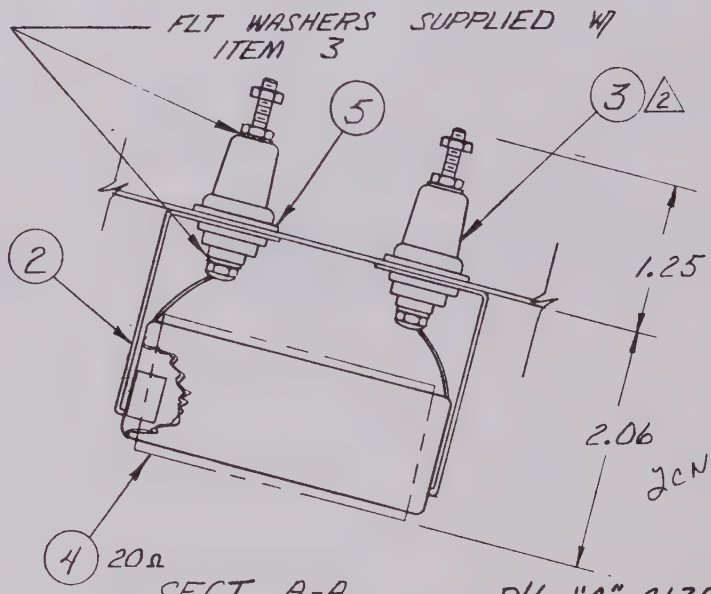
MODEL NO	SIZE	CODE IDENT NO.	DRAWING NO.	REV LTR
STD PART	D		2621006	A
PART NO. 2621006	SCALE FULL		SHEET 1 OF 1	

MULTI-USAGE STD			3-5-70	H/C
NEXT ASSY	USED ON	SERIAL NOS.	DATE EFF	DWG REV LTR
APPLICATION		EFFECTIVITY		

BLUE CARD

REVISIONS				
ZONE	LTR.	DESCRIPTION	DATE	APPROVED
	A	PER ECN M683 RBrooks 5-28-74 ADDED BRACKET, PICTURE CHANGE ONLY	5-29-74	M. Tuck 5-29-74





ECN X436 8-30-77

P/L "A" SIZE

QTY. REQ'D	NOMENCLATURE OR DESCRIPTION	CODE IDENT.	IDENTIFYING NUMBER	SPECIFICATION	MATERIAL OR NOTE	ITEM NO

2 DISCARD PAPER WASHERS SUPPLIED WITH ITEM NO. 3. REPLACE WITH ITEM NO. 5.

1. ALL DIM. REF ONLY

NOTES:

UNLESS OTHERWISE SPECIFIED THE FOLLOWING APPLIES
BREAK ALL SHARP EDGES .005
MAX., SURFACE ROUGHNESS 125 RMS
THDS. INT. CL 2B, EXT. CL. 2A

NEXT ASSY.	USED ON	SERIAL NOS.	DATE EFF.	DWG. REV. LTR.
2635402	2850			—

APPLICATION | EFFECTIVITY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 ANGLES ± ½°
DECIMALS .XX ± .010
.XXX ± .005

MATERIAL:

FINISH.

	BY	DATE
DESIGN		
DRAFTED	KNAPP	5-2-72
CHECKED	Harris	7-6-72
APPROV.	L. ELLIS	7-6-72

DO NOT SCALE DRAWING

PART NO. 2635876

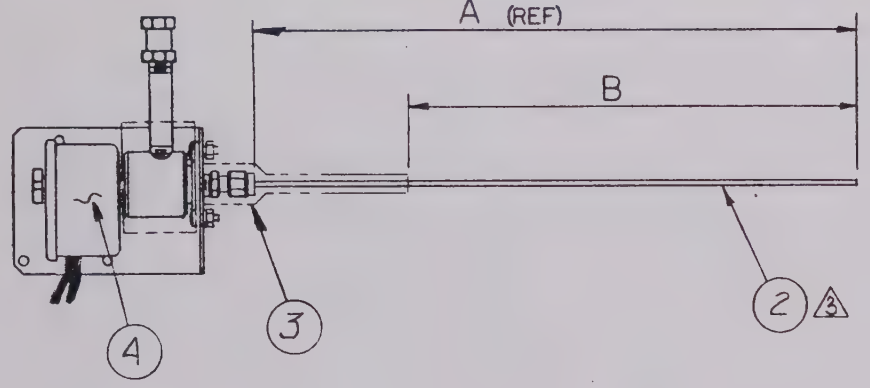
DELTA DESIGN INC.
8000 FLETCHER PKWY.
LA MESA, CALIF 92041
TEL: A/C (714) 465-4141

TITLE: HEATER ASSY.

SIZE	CODE IDENT. NO.	DRAWING NO.	REV LTR
B		2622520	

SCALE FULL | SHEET 1 OF 1

BLUE CARD



REVISIONS				
ZONE	LTR	DESRIPTION	DATE	APPD
	A	PER ECN M694 DTD 6-4-74 F.J.O. 4.75 DIM WAS 3.75		11.3.74 6-6-74
	B	PER ECN M747 REVISED 6-24-74 -001 "B" DIM WAS 4.75	7-8-74	Neal Ball
	C	PER ECN M1012 OLEJNIK 6-11-75 -002 "A" DIM WAS 10.44 "B" DIM WAS 3.00	6/12/75	R Engr.
	D	PER ECN M1017 OLEJNIK 7-16-75	7/16/75	R Engr.
	E	PER ECN 1365 BGM 3-28-78 VALVE ASSY ITEM 4 UPDATED, SEE ECN — TABULATION BLOCK 4 50 WAS 3.00	4-13-78	[illegible]
	F	PER ECN M1521 BGM 7-20-78 INJECTOR ASSY ITEM 2 UPDATED, A+B DIMS CHANGED IN TABULATION BLOCK, SEE ECN	7-31-78	[illegible]

DASH NO	A	B	USED ON
-001	8.62	3.75	2300
-002	10.12	5.50	2850
-003	7.00	6.00	7650
-004	9.18	6.00	5900
-005	26.62	20.00	2850
-006			
-007			
-008			
-009			
-010			

3 INSERT ITEM 2, TUBE, ALL THE WAY TO VALVES INNER ORIFICE BEFORE TIGHTENING DOWN TUBE FITTINGS

3 FINISH (IF APPLICABLE)

1 MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

MULTIPLE STD USAGE

DASH	QTY	NEXT ASSY	USED ON	SERIAL NO.	DATE EFF	DWG REV
APPLICATION				EFFECTIVITY		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON DECIMALS .XX ± .03 .XXX ± .010 ANGLES 0° 30'

HOLE TOLERANCES

.013 THRU .125	+.004 -.001	.251 THRU .500	+.004 -.001
.126 THRU .250	+.005 -.001	.501 THRU .750	+.005 -.001

MATERIAL 1

FINISH 3

ENGINEERING ACTIVITY

DESIGN	
DRAFTED	KNAPP 3-29-73
CHECKED	[illegible]
APPROV	[illegible] 4-6-73
RELEASE	

DO NOT SCALE DWG

DELTA DESIGN INC.
A SUBSIDIARY OF CONU INC.
5725 KEARNY VILLA RD SAN DIEGO, CA. 92123 - TEL (714) 292-3000

TITLE: CO_2 ASSY (900 PSI) SINGLE STEM

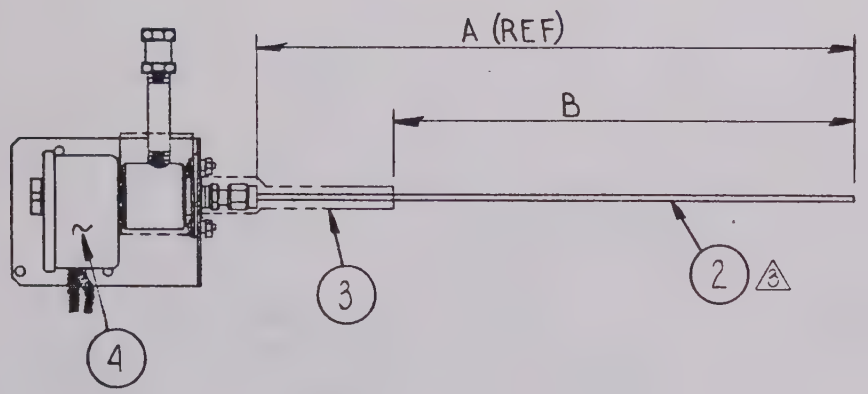
SIZE	CODE IDENT	
B		2618016

SCALE 1/2 X SHEET 1 OF 1

INITIAL RELEASE ECN M[illegible]

20

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD
	B	PER ECN M1365 4-14-78 F.J.O.	4-14-78	
	C	PER ECN M1521 BGM 7-21-78 INJECTOR ASSY. ITEM 2, UPDATED, A & B DIMS. CHANGED IN TABULATION BLOCK, SEE ECN	7-31-78	



DASH NO	A	B	USED ON
-001	8.62	3.75	2300
-002	10.12	5.50	2850
-003	7.00	6.00	7650
-004	9.18	6.00	5900
-005	26.62	20.00	2850
-006			
-007			
-008			
-009			
-010			

3 INSERT ITEM 2, TUBE, ALL THE WAY TO VALVE 5 INNER ORIFICE BEFORE TIGHTENING TUBE FITTINGS

4 FINISH (IF APPLICABLE)

4 MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

DASH	QTY	NEXT ASSY	USED ON
		MULTI-STD USAGE	

APPLICATION

SERIAL NO. | DATE EFF | DWG REV

EFFECTIVITY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS: .XX ± .03; .XXX ± .010
ANGLES: 0° 30'
HOLE TOLERANCES
.013 THRU .125 +.004 −.001
.131 THRU .500 +.006 −.001
.126 THRU .250 +.003 −.001
.501 THRU .750 +.008 −.001

MATERIAL 4

FINISH 4

ENGINEERING ACTIVITY: ECN 1365

DESIGN	
DRAFTED	BGM 3-26-78
CHECKED	
APPROV	
RELEASE	

DO NO SCALE DWG

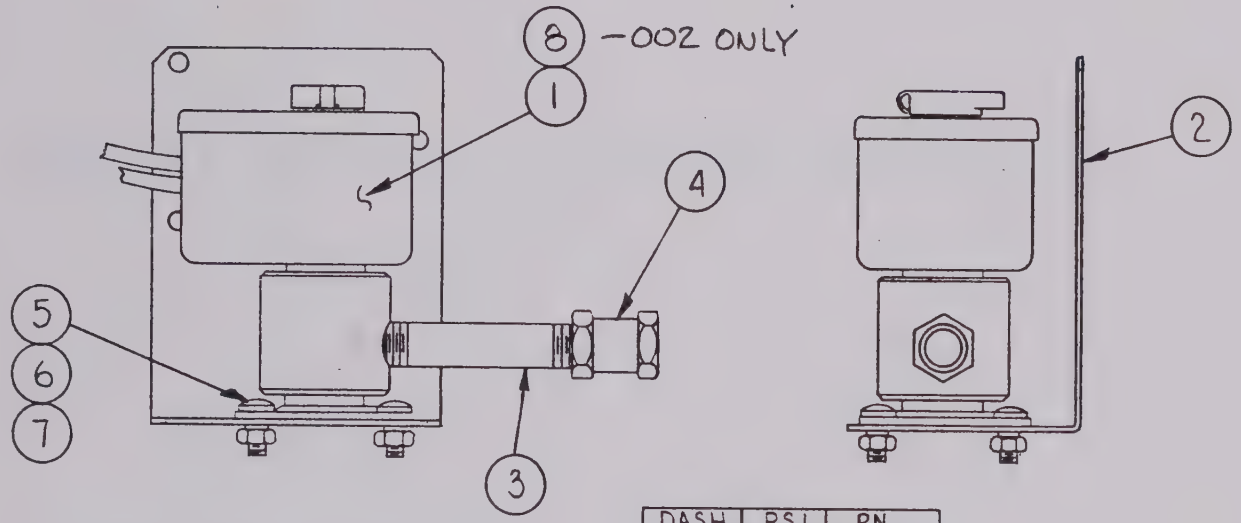
DELTA DESIGN INC.
A SUBSIDIARY OF CONU INC.
SAN DIEGO, CA. 92123

TITLE: CO_2 ASSY. (300 PSI) SINGLE STEM

SIZE	CODE IDENT	
B		2618015

SCALE 1/2 SHEET 1 OF 1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD



DASH	PSI	PN
-001	900	1800117
-002	300	1800105

⚠ FINISH (IF APPLICABLE)

⚠ MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

DASH	QTY	NEXT ASSY	USED ON
		MULTI-USAGE	

APPLICATION

SERIAL NO.	DATE EFF	DWG REV

EFFECTIVITY

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS: .XX ± .03, .XXX ± .010
ANGLES: 0° 30'

HOLE TOLERANCES

MATERIAL ⚠

FINISH ⚠

ENGINEERING ACTIVITY

DESIGN	
DRAFTED	BGM 3-24-78
CHECKED	
APPROV	
RELEASE	

DO NO SCALE DWG

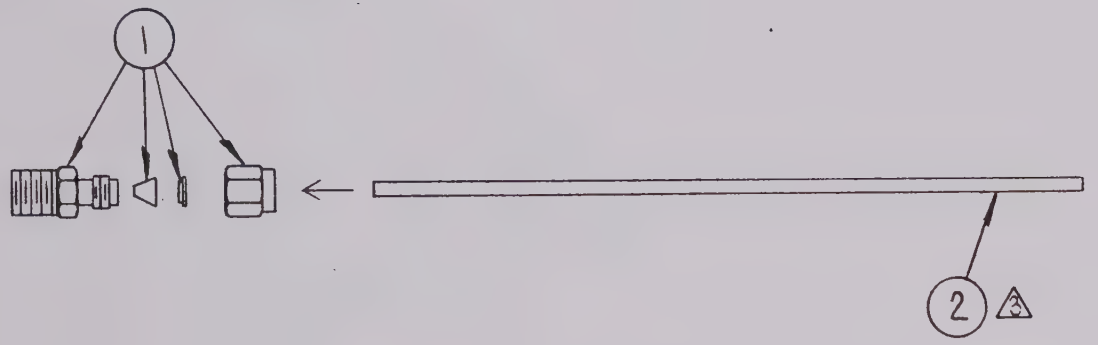
DELTA DESIGN INC.
A SUBSIDIARY OF CONU INC.
SAN DIEGO, CA. 92123

TITLE: CO_2 VALVE & BRACKET ASSY

SIZE	CODE IDENT	
B		1647407

SCALE 1/1 SHEET 1 OF 1

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD



4) FOR INSTRUCTIONS ON HOW TO ASSEMBLE SEE NEXT ASSEMBLY

3 REMOVE ALL BURRS & SHARP EDGES, CLEAR I.D. OF ANY OBSTRUCTIONS

4 FINISH (IF APPLICABLE)

5 MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

DASH	QTY	NEXT ASSY	USED ON
		2618016	-002
		2618015	-001

APPLICATION

SERIAL NO. | DATE EFF | DWG REV

EFFECTIVITY

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS: .XX ± .03; .XXX ± .010
ANGLES: 0° 30'

HOLE TOLERANCES

MATERIAL 1

FINISH 4

ENGINEERING ACTIVITY: ECN M1521

DESIGN

DRAFTED BGM 7-14-78

CHECKED

APPROV

RELEASE

DO NO SCALE DWG

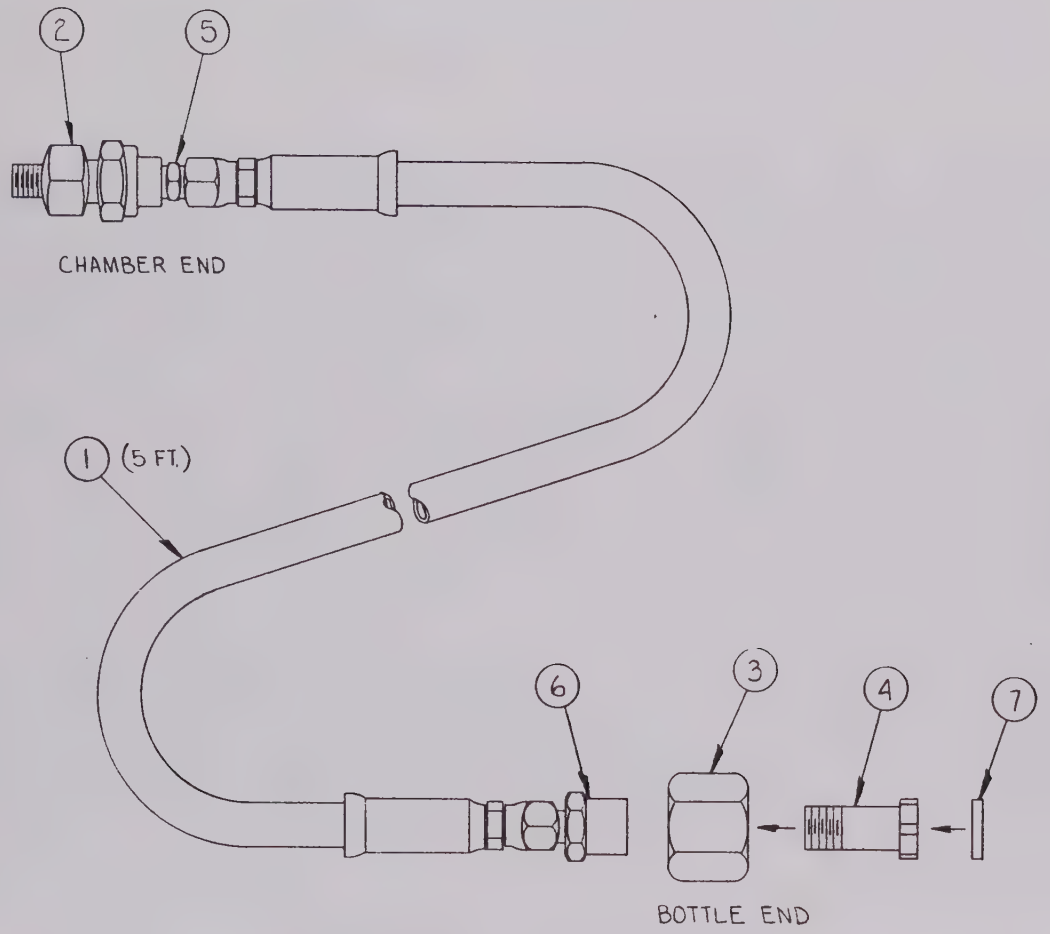
DELTA DESIGN INC.
A SUBSIDIARY OF CONU INC.
SAN DIEGO, CA. 92123

TITLE: INJECTOR ASSY, CO_2 SINGLE STEM

SIZE B | CODE IDENT | 1647840

SCALE NONE | SHEET 1 OF 1

BLUE CARD



DASH	QTY	NEXT ASSY	USED ON
001	1	1640111	8000
001	1		7650
001	1	2636342	6400
001	1	2635601	5700
001	1	2636283	3900
001	1	2635402	2850
001	1	2605110	2300

APPLICATION

SERIAL NO. | DATE EFF | DWG REV

EFFECTIVITY

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS: .XX ± .03; .XXX ± .010
ANGLES: 0° 30'

HOLE TOLERANCES
.013 THRU .125 +.004 −.001
.126 THRU .250 +.005 −.001
.251 THRU .500 +.006 −.001
.501 THRU .750 +.006 −.001

MATERIAL ⚠1
FINISH ⚠2

ENGINEERING ACTIVITY
ECN M1622

DESIGN	B MOLSEN 10-2-72
DRAFTED	
CHECKED	
APPROV	
RELEASE	

DO NOT SCALE DWG

DELTA DESIGN INC.
A SUBSIDIARY OF CONU INC.
SAN DIEGO, CA. 92123

TITLE: HOSE SHIP KIT

SIZE C | CODE IDENT | 2618020

SCALE 1/1 | SHEET 1 OF 1

⚠1 FINISH (IF APPLICABLE)

⚠2 MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

BLUE CARD

INDEX OF ASSEMBLIES - 2850 CHAMBER

	TITLE	SIZE & NO.	SHEET
1).	Chamber Ass'y	D2635402	1
2).	Innerliner Ass'y	D2635382	1
3).	Innerliner Spotweld Ass'y	D2635381	1
4).	Sheet, Top Ass'y	C2635380	1
5).	Sheet, Bottom Ass'y	C2635377	1
6).	Sheet, R. Baffle Ass'y	B2635371	2
7).	Can Ass'y	B2632196	2
8).	Partition Ass'y	D1643276	3
9).	Panel Ass'y, Rear	D2635394	3
10).	Panel Ass'y, R. Side	D2635396	3
11).	Panel Ass'y, Bottom	D2635397	3
12).	Bezel Ass'y	D2635401	3
13).	Cable Ass'y W1	A2635264	4
14).	Cable Ass'y W2	A2635265	4
15).	Weld Ass'y, Tube Guide	B1640309	4
16).	Motor Ass'y, Blower	D2621006	4
17).	Thermoswitch Ass'y	B2602503	5
18).	Heater Ass'y	B2622520	5
19).	Element Ass'y, 20ohm	B2635875	5
20).	CO_2 Ass'y	B2618016	6
21).	Injector Ass'y, CO_2 Single Stem	B1647840	6
22).	CO_2 Valve & Bracket Ass'y	B1647407	6
23).	Plate Ass'y, Power	C2635057	7
24).	Capacitor Ass'y, Mod	A2635048	7
25).	Cable Ass'y	A2635833	8

	TITLE	SIZE & NO.	SHEET
26).	Ship Kit Ass'y	C2618020	10
27).	CO_2 Ass'y, Single Stem	B2618015	11
28).	Injector Ass'y CO_2 Single Stem	B1647840	11
29).	CO_2 Valve & Bracket Ass'y	B1647407	11

P.L. 2635402 REV _____ SHT 1 OF 11

DESCRIPTION TOP ASS'Y 2850 CHAMBER

NEXT ASSY END ITEM BY ARGMA CK'D _____ APPD _____

REV	ECN	DATE	BY	APP
R	1521	7-24-78	BCH	[illegible]
S	1629	10-4-78	BCH	[illegible]
T	1720	12-5-78	[illegible]	[illegible]

DELTA DESIGN
5725 KEARNY VILLA RD.
SAN DIEGO, CALIF.

JOB NO. _____ S.O. NO. _____
QTY _____ PROM DATE _____ ACT _____
RUN # _____ MACH _____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO.	STOCK OR PART NO.	JOB QTY	AUL	QTY REC	FAB CD	PURCHASING P.O. NO	QTY DUE	REC'D	MANUFACTURE ACT STD	EST ACT HRS	COM COM	PLATE/PAINT IN	OUT	AREA
00	X					D	2635402	K	CHAMBER ASS'Y. (2850)		2635402													
00																								
00	REF					D	1635840		SCHEMATIC															
00	REF					D	1635838	A	SCHEMATIC 240 VAC															
00	REF					C	1635836		125 TO 240 VAC CONVERSION															
00	REF		⚠			C	1640222	A	LN2 INSTAL. ASS'Y. - VALCOR VALVE (IN FIELD)		1640222-006													
00	REF					D	1643453	B	CO2 TO LN2 CHMB. CONVERSION ASS'Y.															
00	REF					D	2639166	C	CO2 - LN2 DUAL CONVERSION															
00	REF					D	1640082	B	OPTION CO2 TO LN2 WITH REDUNDANT VALVE		1640082-001													
00	REF					D	1640082	B	OPTION CO2 - LN2 DUAL WITH REDUNDANT VALVE		1640082-002													
00	REF					P/L	1648289		TOP ASSY, TYPE III CONTROLLER															
00																								
01	1					D	2635382	B	INNERLINER ASS'Y.		2635382													
00																								
00																								
01	1					D	2635381	A	INNERLINER SPOTWELD ASS'Y.		2635381													
00																								
00																								
01	1					C	2635380	A	SHEET, TOP ASS'Y.		2635380													
00																								
01	1					C	2635380	A	SHEET, TOP		1635380													
02	2					A	1635379		SHEET, ANGLE		1635379													
03	1					A	1635378		SHEET, DEFLECTOR		1635378													
04	1					B	1635366		SHEET, ANGLE		1635366													
05																								
06																								
02	1					C	2635377		SHEET, BOTTOM ASS'Y.		2635377													
00																								
01	1					C	2635377		SHEET, BOTTOM		1635377													
02	2					A	1635379		SHEET, ANGLE		1635379													
03	1					B	1635366		SHEET, ANGLE		1635366													
04																								
05																								

NOTES: ⚠ THESE DWGS. ARE FOR OPTIONAL EQUIP. ONLY, AND ARE NOT PART OF BASIC CHAMBER.

P/L 2635402

P/L 2635402 REV — SHT 2 OF 11

DESCRIPTION TOP ASS'Y (2850)

NEXT ASSY END ITEM BY AROMA CK'D — APPD —

REV | ECN | DATE | BY | APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF.

JOB NO. — S.O. NO —
QTY — PROM DATE — ACT —
RUN * — MACH —

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO.	STOCK OR PART NO.	JOB QTY	AUL	QTY REC	FAB CD	PURCHASING PO NO	QTY DUE	REC	MANUFACTURE STD HRS	ACT EST COM	ACT COM	PLATE/PAINT IN	OUT	AREA
06																								
03	1					D	1635376	C	SHEET, RIGHT		1635376													
04	1					D	1635375	B	SHEET, LEFT		1635375													
05																								
06	1					B	1635373	B	SHEET, TOP DEFLECTOR		1635373													
07	1					B	1635372	A	SHEET, BOTTOM DEFLECTOR		1635372													
08	1					B	1630007	C	RETAINER		1630007													
09	1					B	1634771	C	TUBE, CO_2 VENT		1634771-005													
10	1					B	1634780	E	TUBE, LN_2 GUIDE		1634780-010													
11	1					B	1634774		TUBE, PROBE GUIDE		1634774-004													
12																								
13																								
14																								
15																								
02	1					B	2635371		SHEET, RIGHT BAFFLE ASS'Y.		2635371													
00																								
01	1					B	1635370		SHEET, RIGHT BAFFLE		1635370													
02	1					A	1635369		SHEET, PROBE GUARD		1635369													
03																								
03	1					B	1635368		SHEET, LEFT BAFFLE		1635368													
04	1					C	1635367	B	SCROLL	1635367	M/F 2100701													
05	1					B	2632196	D	CAN ASS'Y.		2632196-004													
00																								
01	1					B	1632350	C	CAN		1632350-004													
02																								
03																								
04	2					A	1631838	A	TAB		1631838													
05	1								GROMMET		1500026													
06																								
06	16								*4 × 1/4 PHP-SMS		6904142-400													
07	6								*6 × 3/8 PHP-SMS		6906382-400													
08	1					B	1600015		SCROLL RING		1600015													
09	1					C	1635374		SHEET, BACK		1635374													

NOTES:

P/L 2635402

P/L 2635402 REV ___ SHT 3 OF 11

DESCRIPTION TOP ASS'Y (2850)

NEXT ASSY END ITEM BY ~~ARMA~~ CK'D ___ APPD ___

REV ECN DATE BY APP

DELTA DESIGN
5725 KEARNY VILLA RD.
SAN DIEGO, CALIF.

JOB NO. ___ S.O. NO. ___

QTY ___ PROM DATE ___ ACT ___

RUN * ___ MACH ___

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO.	STOCK OR PART NO.	JOB QTY	AUL	QTY REC	FAB CD	PURCHASING P.O. NO.	QTY DUE	REC	MANUFACTURE ACT STD HRS	EST ACT CON	COMP	PLATE/PAINT IN	OUT	AREA
10	A/R								RTV (RED)	DOW-CORNING	2400003													
11																								
12																								
13																								
14																								
02	1					D	1643276	A	PARTITION ASS'Y.		1643276-001													
00																								
00	REF					C	1635989	D	SILKSCREEN		1635989													
01	1					D	1643276	A	PARTITION .06 AL.ALY.	3003-H14 FINEBARK	1643276													
02	9								*6-32 RIVNUT, FLT. HD.		1700036													
03	6								*8-32 RIVNUT, FLT. HD.		1700006													
04																								
03	1					D	2635394	C	PANEL ASS'Y., REAR		2635394													
00																								
01	1					D	2635394	C	PANEL, BACK		1635394													
02	8								*6-32 RIVNUT, CSK. HD.	A6-106	1700037													
03																								
04	1					D	1635395	B	PANEL, LEFT SIDE		1635395													
05	1					D	2635396		PANEL ASS'Y., RIGHT SIDE		2635396													
00																								
01	1					D	2635396		PANEL .062 AL. ALY.	3003-H14 FINEBARK	1635396-001													
02	7								*6-32 RIVNUT, CSK. HD.	BF GOODRICH A6-106	1700037													
03	1								*8-32 RIVNUT, CSK. HD.	BF GOODRICH A8-106	1700005													
04																								
06	1					D	2635397		PANEL ASS'Y., BOTTOM		2635397													
00																								
01	1					D	2635397		PANEL, BOTTOM		1635397-001													
02	4								*6-32 RIVNUT, CSK. HD.	BF GOODRICH A6-106	1700037													
03	4								*10-32 RIVNUT, FLT. HD.	BF GOODRICH A10-80	1700035													
04																								
07	1					D	1635398	B	PANEL, TOP		1635398													
08	1					D	1600526	H	PANEL, FRONT		1500526													
09	1					D	2635401	B	BEZEL ASS'Y.		2635401													

NOTES:

P/L 2635402

PL 2635402 REV — SHT 4 OF 11

DESCRIPTION TOP ASS'Y 2850 CHAMBER

NEXT ASSY END ITEM BY ~~Arena~~ CK'D — APPD —

REV	ECN	DATE	BY	APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF.

JOB NO. — S.O. NO —
QTY — PROM DATE — ACT —
RUN * — MACH —

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO.	STOCK OR PART NO.
00											
01	2					B	1634689	B	ANGLE, BEZEL		1634689-003
02	2					B	1634689	B	ANGLE, BEZEL		1634689-004
03											
10	1					A	2635264	A	CABLE ASS'Y. (W1)		2635264-001
00											
01	A/R								WIRE, 18 AWG	COHU STK.	7700618-999
02	6								SOLDERLESS TERMINAL	(SPADE)	1500055
03											
04											
11	1					A	2635265	B	CABLE ASS'Y. (W2)		2635265-004
00											
01	A/R								WIRE 14 AWG	COHU STK.	7700614-999
02	A/R								WIRE 18 AWG	COHU STK.	7700618-999
03	8								SOLDERLESS TERMINAL	(SPADE)	1500055
04	2								SOLDERLESS TERMINAL	(SPADE)	150054
05											
06											
12	1					A	1602967	D	OUTER PLATE, VENT		1600533
13	1					A	1602968	D	GASKET, VENT		2400063
14	1					B	1640309		WELD ASS'Y.-TUBE GUIDE		1640309-001
00											
01	1					B	1640309		PLATE (1.25 × 1.25 × .032)	302-304 SST	1640309-101
02	1					B	1640309		TUBE (.50 O.D. × .028 WALL × 1.00 LG.) WELDED & DRAWN		1640309-102
03											
15	4								GASKET, STRIP		2400024
16	1					B	1640100		FLEXIDRIVE	1640100-101	M/F 1500451
17	1					D	2621006	A	MOTOR ASS'Y, BLOWER		2621006
00											
01	1					C	1632174		50/60 Hz MOTOR		2100652
02	4					B	1632176		INSULATION SPACER		4100174
03	1					B	1632177		MOTOR PLATE		1632177
04	8								#10 LOCKWASHER		6610011

PURCHASING P.O. NO	QTY DUE	REC	MANUFACTURE ACT	EST ACT	STD HRS	COMP %	PLATE/PAINT IN	OUT	AREA

NOTES:

P/L 2635402

PL 2635402 REV ____ SHT 5 OF 11
DESCRIPTION TOP ASS'Y (2850)
NEXT ASSY END ITEM BY ____ CK'D ____ APPD ____

REV ECN DATE BY APP

DELTA DESIGN
5725 KEARNY VILLA RD.
SAN DIEGO, CALIF.

JOB NO ____ S.O. NO ____
QTY ____ PROM DATE ____ ACT ____
RUN * ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO.	STOCK OR PART NO.	JOB QTY	AUL	QTY REC	FAB CD	PURCHASING P.O. NO	QTY DUE	REC	MANUFACTURE ACT STD HRS	EST ACT COM	COM	PLATE/PAINT IN	OUT	AREA
05	4								* 10-32 HEX NUT		6710321													
06	1					C	1635327	A	SPACER		4100173													
07	1					B	1632180	A	SCROLL GASKET		0200116													
08	A/R								RTV-106		2400003													
09	1					B	1632186		STRIP WHEEL		2100505													
10	4								* 10-32 × 1½ PHP-MS		6810326-424													
11																								
12																								
13																								
14																								
18	2					B	1600091	B	SHIM, KEEPER ⚠		1600091													
19	2					C	1635605	B	LATCH KEEPER		4100051													
20	4								FOOT, RUBBER		1500416													
21	A/R								INSULATION, FIBERGLASS		2400025													
22	A/R								INSULATION, PRESSTITE		2400026													
23	1					B	2602503	C	THERMOSWITCH ASS'Y.	(S1)	2300004													
00																								
01	1								THERMOSTAT	VULCAN 1DIC2-4	2300004													
02	1					A	1600007	C	BRACKET		1600007													
03																								
24	1								LAMP, NEON	(DS1)	1400082													
25	1								RELAY	(K1)	1400218													
26	1								CAPACITOR .05μf 400V	(C1)	0700520-400													
27	1					B	2622520	A	HEATER ASSY.	(HR1)	2622520													
00																								
01	1					C	1635870	C	SHEET, HEATER		1635870													
02	4					B	1635868		STANDOFF, HEATER		1635868													
03	4								INSULATOR, CERAMIC		1500327													
04	2					B	2635875		ELEMENT 20Ω		2635875-004													
00																								
01	1					B	2635875		ELEMENT, HTR. 20Ω	LYON-RURAL ELECT.	2200005													
02	2								STUD ⚠	BIRNBACH #458	1500327													
03	2								NUT ⚠	BIRNBACH #458	1500327													

NOTES: ⚠ USE ONLY AS REQ'D. TO OPTIMIZE SEAL.
⚠ ITEMS 2 & 3 ARE SEPARATED FROM STK. ITEM 1500327 AND SUPPLIED TO VENDOR.

P/L 2635402

P.L. 2635402 REV ____ SHT 6 OF 11

DESCRIPTION TOP ASS'Y. (2850)

NEXT ASSY END ITEM BY ____ CK'D ____ APPD ____

REV	ECN	DATE	BY	APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF.

JOB NO. ____ S.O. NO. ____
QTY ____ PROM DATE ____ ACT ____
RUN * ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO.	STOCK OR PART NO.	JOB QTY	AUL	QTY REC	FAB CD	PURCHASING P.O. NO.	QTY DUE	REC'D	MANUFACTURE ACT STD HRS	EST ACT COM	CCM	PLATE/PAINT IN	OUT	AREA
04																								
05																								
05	4					A	1635867		GASKET, INSULATOR		1635867													
06																								
07																								
08																								
28	1					B	2618016	F	CO_2 ASS'Y. (L1)	900 P.S.I. ⚠4	2618016-005													
00																								
~~01~~	~~1~~					~~B~~	~~2618005~~		~~CO_2 VALVE WELDMENT~~		~~2618005-001~~													
02	1					B	1647840		INJECTOR ASS'Y, CO_2 SINGLE STEM		1647840-110													
00																								
~~01~~	~~1~~					~~C~~	~~1618012~~	~~E~~	~~MOD., PIPE PLUG~~	~~1618012-002~~	~~MF 3600078~~													
01	1								FITTINGS, INJECTOR		3600197													
02	1					B	1647841		TUBE, CO_2 INJECTOR	TYPE 300 SS .188 O.D., .028 I.D.	1647841-115													
~~03~~	~~1~~					~~B~~	~~1618006~~	~~B~~	~~TIP, CO_2 INJECTOR~~	~~1618006-002~~	~~4100040~~													
03	1/2								INSULATION	PRESSTITE TYPE 5	2400026													
04	1					B	1647407		CO_2 VALVE & BRACKET ASS'Y.		1647407-001													
00																								
01	1								SOLENOID VALVE	(900 P.S.I.)	1800117													
02	1					B	1645008		BRACKET, CO_2		1645008-101													
03	1								NIPPLE, BRASS-1/8 NPT x 2.00		3601038													
04	1								COUPLING 1/8 NPT		3600102													
05	4								* 8-32 x 3/8 PHP-MS		6808323-804													
06	4								* 8 SPLIT LOCKWASHER		6608010													
07	4								* 8-32 HEX NUT		6708320													
08																								
09																								
10																								
05																								
06																								
29	1								TERMINAL BLOCK	(TB1)	1400572													
~~30~~	~~1~~					~~C~~	~~2635055~~	~~A~~	~~PANEL ASS'Y, SIGNAL~~	~~(A3)~~	~~2635055~~													
00																								

NOTES: ⚠4 CO_2 PSI OPTIONAL PER CUSTOMER PREFERENCE

P/L 2635402

PL 2635402 REV ____ SHT 7 OF 11

DESCRIPTION TOP ASS'Y (2850)

NEXT ASSY END ITEM BY ~~Arena~~ CK'D ____ APPD ____

REV	ECN	DATE	BY	APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO ____ S O NO ____
QTY ____ PROM DATE ____ ACT ____
RUN ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO	STOCK OR PART NO.	JOB QTY	AUL	QTY REC	FAB CD	PURCHASING P.O. NO	QTY DUE	REC	MANUFACTURE ACT STD HRS	EST ACT COM	CCM	PLATE/PAINT IN	OUT	AREA
00																								
01	1					B	1635054	C	PANEL, SIGNAL		1635054													
02	1					B	2600409		PLUG MOD, AMPHENOL	(P1)	2600409													
00																								
01	1								PLUG, 4 PIN AUDIO	AMPHENOL 91 MC4M	2000051													
02	1								CHAIN, 4"		1500226													
03	2								*6 EYELET		3600101													
04	1								* 2-56 x 5/32 PHP-MS															
05	A/R								WIRE, 20 GA BUS															
06	1								*2 FLAT WASHER		6602000000													
07																								
03	1								SOCKET	(J1)	2000044													
04	1								TERMINAL BLOCK	(TB1)	1400509													
05	1					A	1600012	C	NULL TERMINAL COVER		1600012													
06	4								*6 x 1/2 PHP-SMS		6906120-400													
07	2								*6-32 x 3/4 PHP-MS		6806323-404													
08																								
09																								
10																								
~~91~~	~~1~~					~~C~~	~~2635058~~	~~K~~	~~PANEL ASSY., POWER~~	~~(A2) 125V~~	~~2635058~~													
00																								
00																								
01	1					C	2635057	H	PLATE ASS'Y., POWER		2635057-003													
00																								
00	REF					C	1635604	A	SILKSCREEN MASTER		1635604-003													
01	1					C	2635057	H	PANEL .08 AL ALY SHT.	6061-T6	1635057-003													
02	4								*6-32 RIVNUT, CSK. HD.	BF GOODRICH AG-10C	1700037													
03																								
02	1								FUSEHOLDER	(XF1)	1400050													
03	2					A	2635048	A	CAPACITOR, MOD.	(C1, C2)	2635048													
00																								
01	1								CAPACITOR		0800007													
08	1								SWAGE NUT		1700029													

NOTES:

P/L 2635402

P.L. 2635402 REV ____ SHT 8 OF 11

DESCRIPTION TOP ASS'Y (2850)

NEXT ASSY END ITEM BY Arma CK'D ____ APPD ____

REV	ECN	DATE	BY	APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF.

JOB NO. ____ S.O. NO. ____

QTY ____ PROM DATE ____ ACT ____

RUN * ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO.	STOCK OR PART NO.	JOB QTY	AUL	QTY REC	FAB CD	PURCHASING P.O. NO	QTY	DUE	REC	MANUFACTURE ACT STD HRS	EST ACT COM	ACT COM	PLATE/PAINT IN	OUT	AREA
03																									
04	1								STRAIN RELIEF		1500077														
05	~~2~~								~~PLUG, BUTCH 1/2"~~		~~9600081~~														
06	1								PLUG, POWER		2000135														
07	8.5 FT.								POWER CORD		1500394														
08	1								* 6-32 x 1/2 PHP-MS		6806321-224														
09	2								* 6-32 x 3/8 PHP-MS		6806323-824														
10	4								* 6 SPLIT LOCKWASHER		6606012														
11	3								SOLDERLESS TERMINAL	(RING)	1500071														
12	1								SOLDERLESS TERMINAL	(RECEPT.)	1500066														
13	5"								WIRE, 14 AWG	COHU STK.	7700 314-999														
14	2								* 6-32 HEX NUT		6706322														
15	1								SOLDERLESS TERMINAL	(RING)	1500056														
16																									
17																									
18																									
19																									
20																									
~~32~~	~~1~~								~~FUSE, 15A~~	~~(A2-F1)~~	~~1400037~~														
33	1								PROBE	(R1)	2300031														
34	1					A	2635833	B	CABLE ASS'Y.	(W3)	2635833-002														
00																									
00	REF					D	1635841	A	SCHEMATIC DIAGRAM	125V															
01	A/R								WIRE, 14 AWG (TEFLON)		1500330														
02	A/R								WIRE, 18 AWG (TEFLON)		1500387														
03																									
04	4								SOLDERLESS TERMINAL	(SPADE)	1500054														
05	2								SOLDERLESS TERMINAL	(SPADE)	1500055														
06	3								SOLDERLESS TERMINAL	(RING)	1500062														
07																									
08																									
35	1					B	1600004	D	COVER, BLOWER MTR.		1600004														
36	6								WIRE NUT, SMALL	(E1-E4, E7, E8)	1500188														

NOTES:

P/L 2635402

P/L 2635402 REV — SHT 3 OF 11
DESCRIPTION TOP ASSY (E850)
NEXT ASSY END ITEM BY — CK'D — APPD —

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO. — S.O. NO —
QTY — PROM DATE — ACT —
RUN * — MACH —

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO.	STOCK OR PART NO.
37	1								GROMMET		1500026
38	1								PLUG (3/8 DIA HOLE)		3600082
39	1								PLUG (1/2 DIA HOLE)		3600081
40	1								PLUG (1 1/4 DIA HOLE)		1700142
41	1								ADAPTER BUSHING		4100003
42	1								NUT		1500735
43	2					A	1635610		SPACER		1635610
44	2					B	1648658		SUPPORT BLOCK - INNER LINER		1648658-101
45	2								SOLDERLESS TERMINAL (RING)		1500062
46											
47											
48	A/R						⚠		WIRE, 14 AWG (TEFLON)		1500380
49	A/R								WIRE, 14 AWG	COHU STK.	7700614-999
50	A/R								WIRE, 20 AWG	COHU STK.	7700620-999
51	2								GROMMET, 1/2"		1500032
52	6								CABLE TIE		1500014
53	6								PUSH MOUNT		1500013
54	1								OUTLET, CONVENIENCE (UI)		1500083
55	4								*4 x 1/2 PHP-SMS		6904120-400
56											
57											
58											
59	2								*6-32 x 3/8 PHP-MS		6806323-304
60	17								*6-32 x 1/2 PHP-MS		6806321-204
61	40								*6 x 1/2 PHP-SMS		6906126-400
62	10								*6 x 1/2 FHP-SMS		6906120-100
63	11								*8 x 1/2 THP-SMS		6908120-600
64	8								*10-32 x 1/2 PHP-MS		6810321-204
65	1								*8-32 x 1/2 THP-MS		6808321-206
66	13								*6 LOCKWASHER		6606010
67	6								*10 SPLIT LOCKWASHER		6610010
68											
69	4								*6 HEX NUT		6706320

REV	ECN	DATE	BY	APP

JOB QTY	AUL	QTY REC	FAB CD	PURCHASING P.O. NO.	QTY	DUE	REC	MANUFACTURE ACT STD HRS	EST	ACT COM	COM	PLATE/PAINT IN	OUT	AREA

NOTES: ⚠ INDICATED ON SHT. 5 OF DWG.

P/L 2635402

P.L. 2635402 REV - SHT 10 OF 11

DESCRIPTION TOP ASS'Y (2850)

NEXT ASSY END ITEM BY ~~ARMLOCK~~'D ____ APPD ____

REV ECN DATE BY APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF.

JOB NO. ____ S.O. NO. ____
QTY ____ PROM DATE ____ ACT ____
RUN # ____ MACH ____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO.	STOCK OR PART NO.
70	1								* 10-32 × 3/4 PHP-MS		6810323-404
71	4								* 10 FLATWASHER		6610000
72	2								* 10-32 HEX NUT		6710320
73	1					C	2618020		SHIP KIT ⚠		2618020-001
00											
01	1								HOSE		3600123
02	1								STRAINER		1400110
03	1								NUT		3600120
04	1								SLEEVE		3600121
05	1								CONNECTOR		3600004
06	1								CONNECTOR		3600119
07	1								WASHER		3600122
74	1								STRAIN RELIEF		1500077
75	1								PLUG, POWER P1 120V		2000135
76	86								POWER CORD		1500394
77	2								CAPACITOR C1, C2		2635048
78	1					B	2600409		PLUG P2		2600409
79	1								SOCKET J2		2000044
80	1								TERMINAL BLOCK TB2		1400509
81	1					A	1600012		NULL TERMINAL COVER		1600012
82	1								CIRCUIT BREAKER CB1 120V	AM2-A3-A20-3	1400008
83	1							⚠	CIRCUIT BREAKER CB1 240V	AM2-A3-A15-2	1400002
84	1							⚠	PLUG, POWER P1 240V	HUBBLE #4570-C	2000224
85	1					C	1647767		CASE, CIRCUIT BREAKER		1647767-101
86	1					B	1643476		IDENTIFICATION PLATE		1643476-101
87	5								SOLDERLESS TERMINAL (RING)		1500071
88	2								SCREW #4 x 1/4 PHPSM		6904140-400
89	4								SCREW #6 x 1/4 PHPSM		6906140-400
90	2								SCREW #6-32 x 3/4 PHPMS		6806323-404
91											
92	1								SCREW #10-32 PHPMS		6810321-219
93	3								LOCKWASHER (EXT) #10		6610031-000
94	2								NUT #10		6710321-000

JOB QTY	QTY REC	FAB CD	PURCHASING P.O. NO	QTY DUE	REC	MANUFACTURE ACT EST ACT STD HRS	COM	COM	PLATE/PAINT IN	OUT	AREA

NOTES: ⚠ TO BE SHIPPED WITH CHAMBER.

P/L 2635402

P.L. 2635402 REV _____ SHT 11 OF 11

DESCRIPTION TOP ASSY (2850)

NEXT ASSY END ITEM BY BGM CK'D _____ APPD _____

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO. _____ S.O. NO _____
QTY _____ PROM DATE _____ ACT _____
RUN # _____ MACH _____

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO.	STOCK OR PART NO.
95	1					B	2618015	C	CO_2 ASSY SINGLE STEM	(300 PSI) ⚠	2618015-005
00											
01	1					B	~~2618005~~		~~CO_2 VALVE WELDMT ASSY~~		~~2618005-002~~
02	1					B	1647840		INJECTOR ASSY CO_2 SINGLE STEM		1647840-009
00											
01	1								FITTINGS, INJECTOR		3600197
02	1					B	1647842		TUBE, CO_2 INJECTOR	TYPE 300 SS (.035 I.D. 1/8 O.D.)	1647842-115
03											
03	A/R								INSULATION	PRESSTITE TYPE 5	2400026
04	1					B	1647407		CO_2 VALVE + BRACKET ASSY		1647407-002
00											
01											
02	1					B	1645008		BRACKET, CO_2		1645008-101
03	1								NIPPLE, BRASS - 1/8 NPT x 2.00		3601038
04	1								COUPLING, 1/8 NPT		3600102
05	4								#8-32 x 3/8 PHP-MS		6808323-804
06	4								#8 LOCKWASHER I.D.		6608010-000
07	4								#8 HEX NUT		6708320-000
08	1								SOLENOID VALVE (300 PSI)		1800105

REV	ECN	DATE	BY	APP

JOB QTY	ALL	QTY REC	FAB CD	PURCHASING PO NO	QTY DUE	REC'D	MANUFACTURE ACT STD HRS	EST ACT CGM	COM	PLATE/PAINT IN	OUT	AREA

NOTES: ⚠ CO_2 PSI OPTIONAL PER CUSTOMER PREFERENCE

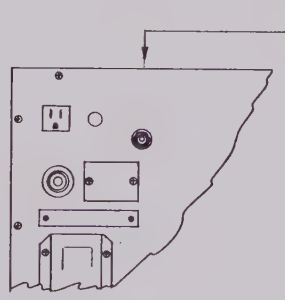
P/L 2635402

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD
	A	PER ECN M2027 F.I.O 5-9-80 CHG'D VIEW OF ITEM 1 REMOVED TERM BRD COVER	5/16	

—INSTRUCTIONS FOR CHAMBER RETROFIT— TYPE V CONTROLLER

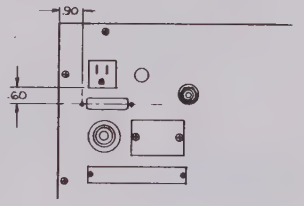
1. REMOVE CHAMBER RIGHT SIDE PANEL TO ALLOW ACCESS TO CONTROLLER & PROBE GUIDE TUBE. ON MODELS 2850, 5900 & 7650 TOP PANEL MUST BE REMOVED AS WELL.
2. REMOVE EXISTING CONTROLLER & ITS PROBE. DO NOT DESTROY BLACK PRESS-TITE.
3. NOTE CHAMBER REAR PANEL CONFIGURATION & DECIDE WHICH MEANS OF MOUNTING THE REMOTE INTERFACE CABLE ASSY. PLUG BEST SUITS YOUR CHAMBER & REQUIREMENTS →
4. MAKE THE REAR PANEL MODIFICATIONS
5. MOUNT THE REMOTE INTERFACE CABLE ASSY PLUG TO THE REAR PANEL— SEE DRAWING D1650223 & PARTS LIST FOR CABLE & HARDWARE CALLOUTS
6. INSERT THERMOCOUPLE ASSY IN PROBE GUIDE TUBE & SECURE IN PLACE USING BLACK PRESS-TITE—SEE DRAWING D1650223 —CAUTION—DO NOT SHORTEN THERMOCOUPLE ASSY WIRE FOR ANY REASON
7. INSTALL TYPE V CONTROLLER & WIRE PER WIRING DIAGRAM D1635840 OR D1635838 SHEET 2 OF 2. IF NECESSARY, COIL EXCESS THERMOCOUPLE WIRE & POSITION IT BETWEEN CONTROLLER & CHAMBER TO ACT AS A SERVICE LOOP IF NEEDED
8. REPLACE TOP PANEL IF YOU HAVE A MODEL 2850, 5900 OR 7650
9. BEFORE REPLACING SIDE PANEL SEE CONTROLLER MANUAL FOR SET UP & CALIBRATION PROCEDURES
10. CALIBRATE CONTROLLER
11. REPLACE SIDE PANEL

IF YOUR MODEL 2850 CHAMBER REAR PANEL LOOKS LIKE THIS, MODIFY BY:

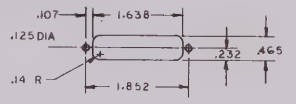


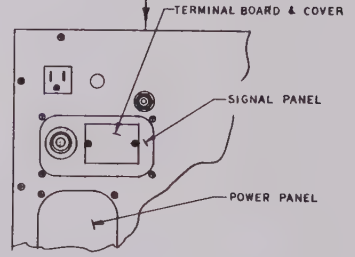
1/2 SCALE

1. ADD CUTOUT AT DIMENSION SHOWN



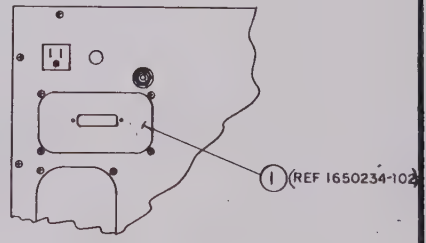
REMOTE INTERFACE CABLE ASSY PLUG CUTOUT DIMENSIONS





1/2 SCALE

1. REMOVE OLD SIGNAL PANEL & REPLACE WITH NEW ITEM 1.

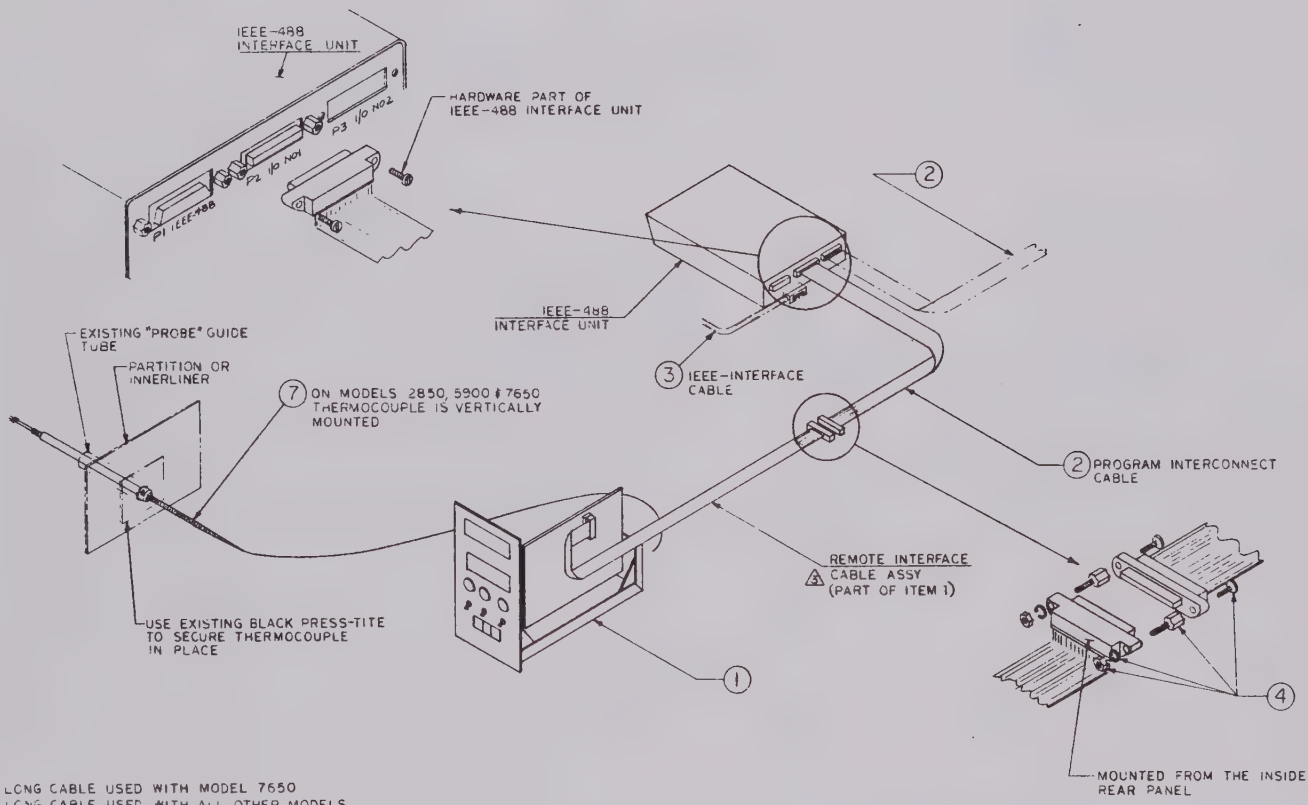


⚠ FINISH (IF APPLICABLE)

⚠ MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE	APPD



⚠ 36" LONG CABLE USED WITH MODEL 7650
28' LONG CABLE USED WITH ALL OTHER MODELS

⚠ FINISH (IF APPLICABLE)

⚠ MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

DASH QTY	NEXT ASSY	USED ON
-	2635379	4145
-	2630342	5400
-	2635601	5500
-	2636283	5900
-	2635403	7550
-	2605113	7700

APPLICATION | SERIAL NO. | DATE EFF | DWG REV | EFFECTIVITY | MATERIAL ⚠ | FINISH ⚠

ENGINEERING ACTIVITY

DESIGN	
DRAFTED	DUFFNIK 11-29-84
CHECKED	
APPROV	
RELEASE	

DO NOT SCALE DWG

DELTA DESIGN INC.
A SUBSIDIARY OF CONIC INC.
SAN DIEGO, CA. 92138

TITLE: INTERCONNECT ASSY. TYPE 'Z' CONTROLLER WITH IEEE-488

SIZE D | CODE IDENT | 1650223

SCALE | SHEET __ OF __

PL 1650230 REV ____ SHT 1 OF 1

DESCRIPTION THERMOCOUPLE ASSY.

NEXT ASSY MAIN HEADER BY F.J.G. CK'D ____ APPD ____

REV	ECN	DATE	BY	APP

DELTA DESIGN
5725 KEARNY VILLA RD
SAN DIEGO, CALIF

JOB NO. ____ S.O NO ____
QTY ____ PROM DATE ____ ACT ____
RUN * ____ MACH ____

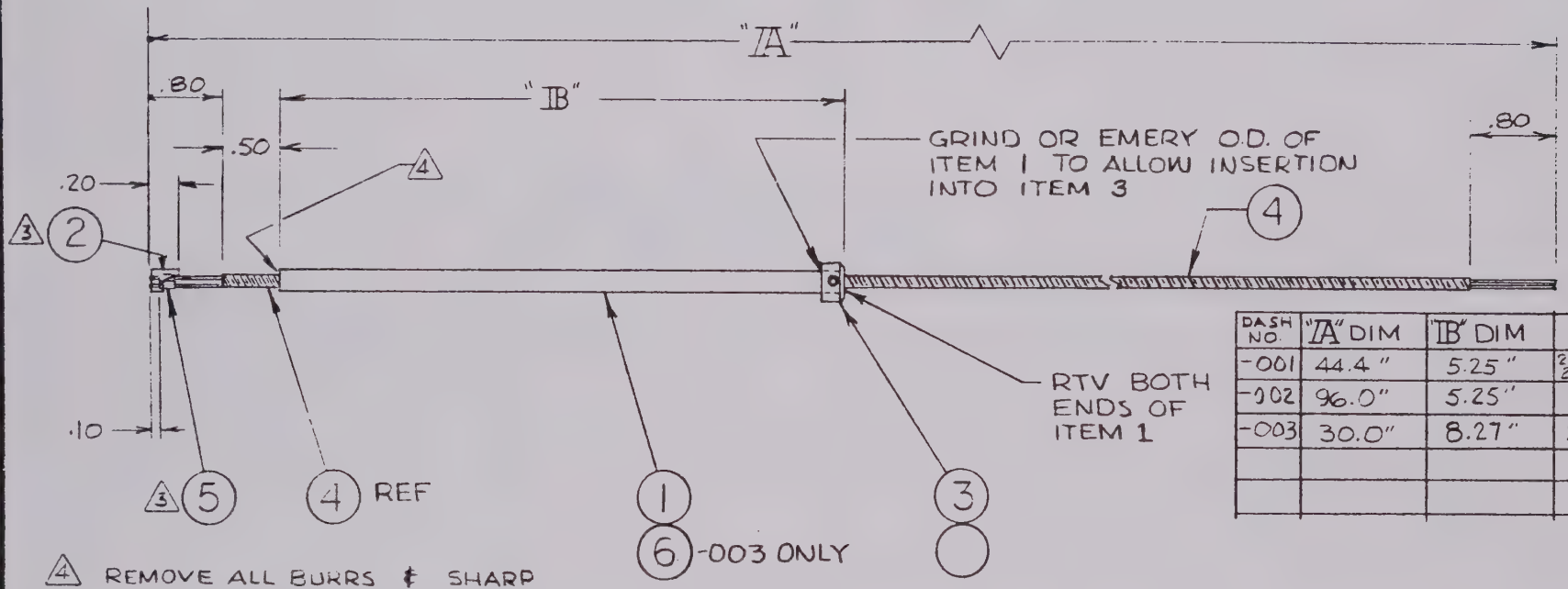
ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO.	STOCK OR PART NO.
00	X					B	650230		THERMOCOUPLE ASSY.		1650230-001
00		X				B	1650230		THERMOCOUPLE ASSY		1650230-002
00			X			B	1650230		THERMOCOUPLE ASSY		1650230-003
00											
00											
00											
00											
01	1	1				B	1650230		TUBE, ALUMINUM		1650230-101
									3/16 O.D. X .022 WALL X 5 1/4 LONG		
02	1	1	1			B	1650230		TUBE, ALUMINUM		1650230-102
									3/16 O.D. X .022 WALL X .20 LONG		
03	1	1	1						COLLAR, SET SCREW	BERG # CS5	1700292
04	4'								WIRE, THERMOCOUPLE	IRON CONSTANTAN	1501375
		8'							" "	" "	1501375
			30"						" "	" "	1501375
05	1	1	1						QUIKTIP	#128543	1700327
06			1				B1650230		TUBE, ALUMINUM		1650230-103
									3/16 O.D. X .022 WALL X 8.27" LONG		

JOB QTY	ALL	QTY REC	FAB CD	PURCHASING PO NO	QTY	DUE	REC	MANUFACTURE ACT STD HRS	EST ACT COM COM	PLATE/PAINT IN	OUT	AREA

NOTES:

P/L 1650230

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPD
	A	PER ECN M[illegible]		



DASH NO.	"A" DIM	"B" DIM	USED ON
-001	44.4"	5.25"	2300 THRU 7650, 2850A
-002	96.0"	5.25"	8000
-003	30.0"	8.27"	2300A

4 REMOVE ALL BURRS & SHARP EDGES FROM I.D. OF ITEM 1 (BOTH ENDS)

3 INSURE ITEM 5 IS SOLIDLY CRIMPED OVER ITEM 4 — THEN ITEM 2 IS CRIMPED OVER ITEM 5

⚠ FINISH (IF APPLICABLE)

⚠ MATL (IF APPLICABLE)

NOTES: UNLESS OTHERWISE SPECIFIED

DASH	QTY	NEXT ASSY	USED ON
003	1	MULTI-USAGE	
002	1	1650223	8000
001	1	1650223	

APPLICATION

SERIAL NO. | DATE EFF | DWG REV

EFFECTIVITY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON
DECIMALS .XX ± .03 .XXX ± .010
ANGLES 0°30'
HOLE TOLERANCES
.062 +.004 -.001 THRU .132
.251 +.006 -.001 THRU .375
.376 +.006 -.001 THRU .500
.501 +.008 -.001 THRU .750

MATERIAL ⚠
FINISH ⚠

ENGINEERING ACTIVITY M1952

DESIGN	
DRAFTED	OLEJNIK 12/6/72
CHECKED	
APPROV	
RELEASE	

DO NOT SCALE DWG

DELTA DESIGN INC.
A SUBSIDIARY OF CONV INC.
SAN DIEGO, CA. 92123

TITLE: THERMOCOUPLE ASSY.

SIZE B | CODE IDENT | 1650230

SCALE | SHEET 1 OF 1

PL 1650223 REV ___ SHT 1 OF 1

DESCRIPTION INTERCONNECT ASSY TYPE V CONTROLLER WITH IEEE-488

NEXT ASSY MULTI-USAGE BY F.J.O. CK'D ___ APPD ___

REV	ECN	DATE	BY	APP

DELTA DESIGN
5725 KEARNY VILLA RD.
SAN DIEGO, CALIF.

JOB NO ___ S.O. NO. ___
QTY ___ PROM DATE ___ ACT ___
RUN * ___ MACH ___

ITEM NO	ASSY & QTY -001	-002	-003	-004	INDENTURE	SIZE	DRAWING NO.	REV	DESCRIPTION	MFG OR MFG NO.	STOCK OR PART NO.
00	X					D	1650223		INTERCONNECT ASSY- TYPE V CONTROLLER WITH IEEE-488		1650223-001
00											
00											
00											
00											
00											
00											
01	REF					D	1650160		TYPE V CONTROLLER		1650160-001
02	1								PROGRAM INTERCONNECT CABLE		
03	1								IEEE-488 INTERFACE CABLE		
04	1								JACK SOCKET ASSY.	ANSLEY #609-003	1700324
05											
06											
07	1					B	1650230		THERMOCOUPLE ASSY	MULTI-USAGE	1650230-001

JOB QTY	ALL	QTY REC	FAB CD	PURCHASING P.O. NO	QTY	DUE	REC	MANUFACTURE ACT STD HRS	EST ACT COM	COM	PLATE/PAINT IN	OUT	AREA

NOTES:

1650223
P/L

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